1. Given a point location of $\begin{bmatrix}3.0 & -2.0 & -4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}0.0 & 2.0 & 1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

2. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.22 & 0.44 & 0.87\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.77 & 0.42\end{bmatrix}$, what will be the diffuse component of p's final color?

3. What is the normal to a triangle defined by vertices $\begin{bmatrix}-3.0 & -5.0 & 4.0\end{bmatrix}$, $\begin{bmatrix}1.0 & 2.0 & -1.0\end{bmatrix}$, and $\begin{bmatrix}-1.0 & 0.0 & 1.0\end{bmatrix}$ (listed in the order of positive rotation)?

4. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 1.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.55 & 0.2 & 0.81\end{bmatrix}$. Given a light of color $\begin{bmatrix}4.0 & 2.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.5 & 0.84 & 0.21\end{bmatrix}$, a view direction $\begin{bmatrix}0.22 & 0.7 & 0.68\end{bmatrix}$, and an ambient color $\begin{bmatrix}4.0 & 1.0 & 2.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

5. Point p has a surface color of $\begin{bmatrix}2.0 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.23 & 0.9 & 0.37\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 2.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.11 & 0.59\end{bmatrix}$, and a view direction $\begin{bmatrix}0.9 & 0.37 & 0.23\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

6. Given a point location of $\begin{bmatrix}-5.0 & -1.0 & 0.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-3.0 & 2.0 & -1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

7. Point p has a surface color of $\begin{bmatrix}1.0 & 1.7 & 0.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.55 & 0.81 & 0.2\end{bmatrix}$. Given a light of color $\begin{bmatrix}3.0 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.37 & 0.52 & 0.77\end{bmatrix}$, a view direction $\begin{bmatrix}0.21 & 0.59 & 0.78\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.0 & 2.5\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

8. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.11 & 0.59\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 1.0 & 4.0\end{bmatrix}$ and direction $\begin{bmatrix}0.59 & 0.21 & 0.78\end{bmatrix}$, a view direction $\begin{bmatrix}0.59 & 0.21 & 0.78\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.5 & 0.2 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

9. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & 0.0 & 4.0\end{bmatrix}$, $\begin{bmatrix}-5.0 & -5.0 & -1.0\end{bmatrix}$, and $\begin{bmatrix}3.0 & -3.0 & 0.0\end{bmatrix}$ (listed in the order of positive rotation)?

10. Given a point location of $\begin{bmatrix}-5.0 & 0.0 & 0.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-2.0 & -2.0 & -5.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

11. Point p has a surface color of $\begin{bmatrix}1.7 & 0.3 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.54 & 0.58 & 0.61\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.5 & 2.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.52 & 0.37 & 0.77\end{bmatrix}$, a view direction $\begin{bmatrix}0.9 & 0.23 & 0.37\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.7 & 0.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

12. Given a point location of $\begin{bmatrix}0.0 & -2.0 & -3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-1.0 & 4.0 & -3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

13. What is the normal to a triangle defined by vertices $\begin{bmatrix}-2.0 & -4.0 & 0.0\end{bmatrix}$, $\begin{bmatrix}3.0 & -1.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}4.0 & -5.0 & 1.0\end{bmatrix}$ (listed in the order of positive rotation)?

14. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 0.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.37 & 0.88 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 2.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.77 & 0.42\end{bmatrix}$, a view direction

$\begin{bmatrix}0.48 & 0.78 & 0.4\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.3 & 0.7 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

15. Given a point location of $\begin{bmatrix}-3.0 & 4.0 & 3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-1.0 & 4.0 & 3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

16. Point p has a surface color of $\begin{bmatrix}1.7 & 0.7 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.42 & 0.68 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.2 & 0.8 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.4 & 0.78\end{bmatrix}$, a view direction $\begin{bmatrix}0.49 & 0.65 & 0.58\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 3.0 & 3.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

17. Given a point location of $\begin{bmatrix}0.0 & 2.0 & 0.0\end{bmatrix}$ and a light location of $\begin{bmatrix}3.0 & 1.0 & 3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

18. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.6 & 0.0\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 1.0 & 0.2\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.77 & 0.42\end{bmatrix}$, a view direction $\begin{bmatrix}0.84 & 0.44 & 0.32\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.5 & 0.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

19. Given a point location of $\begin{bmatrix}4.0 & 3.0 & -5.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-2.0 & 0.0 & -2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

20. What is the normal to a triangle defined by vertices $\begin{bmatrix}2.0 & 1.0 & 3.0\end{bmatrix}$, $\begin{bmatrix}0.0 & 3.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}4.0 & -4.0 & -4.0\end{bmatrix}$ (listed in the order of positive rotation)?

21. Given a point location of $\begin{bmatrix}-3.0 & -1.0 & -1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-5.0 & 1.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

22. Given a point location of $\begin{bmatrix}-3.0 & -4.0 & -3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-2.0 & -3.0 & 1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

23. Point p has a surface color of $\begin{bmatrix}4.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.55 & 0.2 & 0.81\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.7\end{bmatrix}$ and direction $\begin{bmatrix}0.42 & 0.6 & 0.68\end{bmatrix}$, what will be the diffuse component of p's final color?

24. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.0 & 0.8 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 3.0 & 5.0\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.4 & 0.78\end{bmatrix}$, a view direction $\begin{bmatrix}0.59 & 0.8 & 0.11\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.3 & 1.3\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

25. Point p has a surface color of $\begin{bmatrix}1.0 & 4.0 & 4.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.11 & 0.59 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}5.0 & 4.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.6 & 0.01\end{bmatrix}$, and a view direction $\begin{bmatrix}0.88 & 0.37 & 0.3\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

26. Point p has a surface color of $\begin{bmatrix}1.0 & 1.7 & 1.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.65 & 0.58 & 0.49\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.2 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.37 & 0.3 & 0.88\end{bmatrix}$, and a view direction $\begin{bmatrix}0.4 & 0.48 & 0.78\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

27. Given a point location of $\begin{bmatrix}-2.0 & -5.0 & 1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}3.0 & 3.0 & 1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

28. What is the normal to a triangle defined by vertices $\begin{bmatrix}-1.0 & 4.0 & 0.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & -3.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}3.0 & -2.0 & 4.0\end{bmatrix}$ (listed in the order of positive rotation)?

29. What is the normal to a triangle defined by vertices $\begin{bmatrix}4.0 & -1.0 & -3.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & 2.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}-3.0 & 2.0 & 4.0\end{bmatrix}$ (listed in the order of positive rotation)?

30. Point p has a surface color of $\begin{bmatrix}1.0 & 0.8 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.44 & 0.22 & 0.87\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.5 & 1.0 & 2.5\end{bmatrix}$ and direction $\begin{bmatrix}0.5 & 0.21 & 0.84\end{bmatrix}$, a view direction $\begin{bmatrix}0.69 & 0.54 & 0.48\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.8 & 0.2 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

31. Given a point location of $\begin{bmatrix}2.0 & -2.0 & 0.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & -3.0 & 3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

32. Point p has a surface color of $\begin{bmatrix}1.0 & 5.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.21 & 0.84 & 0.5\end{bmatrix}$. Given a light of color $\begin{bmatrix}4.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.77 & 0.48 & 0.42\end{bmatrix}$, and a view direction $\begin{bmatrix}0.42 & 0.77 & 0.48\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

33. Given a point location of $\begin{bmatrix}-3.0 & 1.0 & -5.0\end{bmatrix}$ and a light location of $\begin{bmatrix}3.0 & 0.0 & -2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

34. Point p has a surface color of $\begin{bmatrix}1.0 & 5.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.77 & 0.42 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.0 & 1.7\end{bmatrix}$ and direction $\begin{bmatrix}0.69 & 0.54 & 0.48\end{bmatrix}$, and a view direction $\begin{bmatrix}0.54 & 0.61 & 0.58\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

35. Point p has a surface color of $\begin{bmatrix}0.5 & 1.0 & 0.8\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.6 & 0.8 & 0.01\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.8 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.3 & 0.55\end{bmatrix}$, and a view direction $\begin{bmatrix}0.68 & 0.42 & 0.6\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

36. Point p has a surface color of $\begin{bmatrix}1.0 & 0.5 & 0.8\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.59 & 0.21 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.5 & 2.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.21 & 0.59\end{bmatrix}$, a view direction $\begin{bmatrix}0.42 & 0.6 & 0.68\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.5 & 0.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

37. What is the normal to a triangle defined by vertices $\begin{bmatrix}-4.0 & 3.0 & 1.0\end{bmatrix}$, $\begin{bmatrix}3.0 & -5.0 & 2.0\end{bmatrix}$, and $\begin{bmatrix}-1.0 & 3.0 & -4.0\end{bmatrix}$ (listed in the order of positive rotation)?

38. Given a point location of $\begin{bmatrix}-2.0 & -2.0 & 2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}1.0 & -2.0 & -3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

39. Point p has a surface color of $\begin{bmatrix}1.0 & 3.0 & 5.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.9 & 0.37 & 0.23\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.3 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.7 & 0.22 & 0.68\end{bmatrix}$, a view direction $\begin{bmatrix}0.3 & 0.78 & 0.55\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

40. Point p has a surface color of $\begin{bmatrix}1.0 & 2.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.21 & 0.59\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 2.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.55 & 0.78\end{bmatrix}$, a view direction $\begin{bmatrix}0.78 & 0.4 & 0.48\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.5 & 1.0 & 0.5\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

41. Point p has a surface color of $\begin{bmatrix}0.5 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.0 & 0.8 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 0.8 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.52 & 0.35\end{bmatrix}$, what will be the diffuse component of p's final color?

42. Given a point location of $\begin{bmatrix}-1.0 & -2.0 & -4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}2.0 & 2.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

43. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & -1.0 & 1.0\end{bmatrix}$, $\begin{bmatrix}0.0 & -1.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}4.0 & 1.0 & 1.0\end{bmatrix}$ (listed in the order of positive rotation)?

44. Point p has a surface color of $\begin{bmatrix}3.0 & 1.0 & 5.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.42 & 0.68 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.7 & 1.0 & 0.7\end{bmatrix}$ and direction $\begin{bmatrix}0.37 & 0.9 & 0.23\end{bmatrix}$, what will be the diffuse component of p's final color?

45. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.37 & 0.3 & 0.88\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.37 & 0.3 & 0.88\end{bmatrix}$, a view direction $\begin{bmatrix}0.9 & 0.37 & 0.23\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

46. Point p has a surface color of $\begin{bmatrix}0.0 & 0.3 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.4 & 0.78 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.5 & 1.0 & 1.5\end{bmatrix}$ and direction $\begin{bmatrix}0.22 & 0.68 & 0.7\end{bmatrix}$, a view direction $\begin{bmatrix}0.21 & 0.5 & 0.84\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 0.8\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

47. Given a point location of $\begin{bmatrix}-4.0 & -5.0 & -3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}0.0 & -5.0 & -5.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

48. What is the normal to a triangle defined by vertices $\begin{bmatrix}-4.0 & 1.0 & 4.0\end{bmatrix}$, $\begin{bmatrix}1.0 & -5.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}4.0 & -5.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

49. Point p has a surface color of $\begin{bmatrix}1.0 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.44 & 0.22 & 0.87\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 4.0 & 5.0\end{bmatrix}$ and direction $\begin{bmatrix}0.6 & 0.8 & 0.01\end{bmatrix}$, and a view direction $\begin{bmatrix}0.55 & 0.78 & 0.3\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

50. Point p has a surface color of $\begin{bmatrix}1.0 & 0.2 & 0.8\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.54 & 0.69 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.3 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.88 & 0.37\end{bmatrix}$, what will be the diffuse component of p's final color?

51. Given a point location of $\begin{bmatrix}-4.0 & 0.0 & 0.0\end{bmatrix}$ and a light location of $\begin{bmatrix}1.0 & 4.0 & 4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

52. Given a point location of $\begin{bmatrix}1.0 & 4.0 & -4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}2.0 & -1.0 & 2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

53. Point p has a surface color of $\begin{bmatrix}1.0 & 2.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.61 & 0.54\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.3 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.68 & 0.7 & 0.22\end{bmatrix}$, what will be the diffuse component of p's final color?

54. Given a point location of $\begin{bmatrix}-4.0 & 0.0 & -1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}2.0 & 2.0 & 4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

55. Given a point location of $\begin{bmatrix}-5.0 & 1.0 & -5.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-1.0 & -3.0 & 1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

56. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.49 & 0.65 & 0.58\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.22 & 0.87 & 0.44\end{bmatrix}$, a view direction $\begin{bmatrix}0.3 & 0.88 & 0.37\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.2 & 1.0 & 0.5\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

57. Given a point location of $\begin{bmatrix}-1.0 & -4.0 & 0.0\end{bmatrix}$ and a light location of $\begin{bmatrix}1.0 & -1.0 & -5.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

58. Point p has a surface color of $\begin{bmatrix}1.0 & 0.3 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.65 & 0.58 & 0.49\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.3 & 1.0 & 1.3\end{bmatrix}$ and direction $\begin{bmatrix}0.59 & 0.78 & 0.21\end{bmatrix}$, a view direction $\begin{bmatrix}0.8 & 0.59 & 0.11\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.0 & 1.0 & 0.5\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

59. Given a point location of $\begin{bmatrix}3.0 & -5.0 & -1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & 4.0 & -2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

60. Point p has a surface color of $\begin{bmatrix}4.0 & 1.0 & 3.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.2 & 0.81 & 0.55\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 2.5 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.69 & 0.54 & 0.48\end{bmatrix}$, what will be the diffuse component of p's final color?

61. What is the normal to a triangle defined by vertices $\begin{bmatrix}2.0 & -4.0 & 0.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & -2.0 & -5.0\end{bmatrix}$, and $\begin{bmatrix}-1.0 & -4.0 & 4.0\end{bmatrix}$ (listed in the order of positive rotation)?

62. Point p has a surface color of $\begin{bmatrix}1.0 & 0.8 & 0.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.7 & 0.22 & 0.68\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 2.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.59 & 0.21\end{bmatrix}$, a view direction $\begin{bmatrix}0.8 & 0.6 & 0.01\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.3 & 0.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

63. Given a point location of $\begin{bmatrix}1.0 & 1.0 & 2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-1.0 & 4.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

64. Given a point location of $\begin{bmatrix}1.0 & 3.0 & -3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-3.0 & -5.0 & 2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

65. What is the normal to a triangle defined by vertices $\begin{bmatrix}-4.0 & 2.0 & 2.0\end{bmatrix}$, $\begin{bmatrix}-5.0 & -3.0 & -1.0\end{bmatrix}$, and $\begin{bmatrix}-5.0 & -2.0 & -4.0\end{bmatrix}$ (listed in the order of positive rotation)?

66. Point p has a surface color of $\begin{bmatrix}0.7 & 1.0 & 0.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.21 & 0.84 & 0.5\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.7 & 0.68 & 0.22\end{bmatrix}$, and a view direction $\begin{bmatrix}0.7 & 0.22 & 0.68\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

67. Given a point location of $\begin{bmatrix}-1.0 & -2.0 & 3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-4.0 & 0.0 & 0.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

68. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & 0.0 & 2.0\end{bmatrix}$, $\begin{bmatrix}0.0 & -5.0 & 3.0\end{bmatrix}$, and $\begin{bmatrix}3.0 & 0.0 & -1.0\end{bmatrix}$ (listed in the order of positive rotation)?

69. Point p has a surface color of $\begin{bmatrix}0.7 & 1.0 & 1.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.52 & 0.35\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.2\end{bmatrix}$ and direction $\begin{bmatrix}0.52 & 0.78 & 0.35\end{bmatrix}$, and a view direction $\begin{bmatrix}0.6 & 0.68 & 0.42\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

70. Point p has a surface color of $\begin{bmatrix}1.0 & 0.2 & 0.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.2 & 0.79\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 1.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.01 & 0.6 & 0.8\end{bmatrix}$, and a view direction $\begin{bmatrix}0.49 & 0.58 & 0.65\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

71. What is the normal to a triangle defined by vertices $\begin{bmatrix}-4.0 & -2.0 & 4.0\end{bmatrix}$, $\begin{bmatrix}3.0 & -3.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}-1.0 & 2.0 & 0.0\end{bmatrix}$ (listed in the order of positive rotation)?

72. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 2.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.23 & 0.37 & 0.9\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.2\end{bmatrix}$ and direction $\begin{bmatrix}0.77 & 0.52 & 0.37\end{bmatrix}$, a view direction $\begin{bmatrix}0.6 & 0.0 & 0.8\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.7 & 1.0 & 0.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

73. What is the normal to a triangle defined by vertices $\begin{bmatrix}-5.0 & -2.0 & 0.0\end{bmatrix}$, $\begin{bmatrix}-2.0 & 0.0 & -4.0\end{bmatrix}$, and $\begin{bmatrix}-3.0 & 3.0 & 4.0\end{bmatrix}$ (listed in the order of positive rotation)?

74. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.55 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}5.0 & 2.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.54 & 0.61\end{bmatrix}$, a view direction $\begin{bmatrix}0.37 & 0.3 & 0.88\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.2 & 1.0 & 0.2\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

75. Point p has a surface color of $\begin{bmatrix}4.0 & 1.0 & 3.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.54 & 0.69\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 4.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.52 & 0.37 & 0.77\end{bmatrix}$, a view direction $\begin{bmatrix}0.78 & 0.55 & 0.3\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.2 & 1.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

76. Given a point location of $\begin{bmatrix}3.0 & -5.0 & -4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-5.0 & -4.0 & -2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

77. Given a point location of $\begin{bmatrix}-5.0 & 3.0 & -4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-5.0 & -1.0 & 3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

78. Point p has a surface color of $\begin{bmatrix}3.0 & 5.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.2 & 0.79\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.0 & 0.7\end{bmatrix}$ and direction $\begin{bmatrix}0.01 & 0.8 & 0.6\end{bmatrix}$, what will be the diffuse component of p's final color?

79. Given a point location of $\begin{bmatrix}-4.0 & 4.0 & -2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}3.0 & -2.0 & -5.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

80. Point p has a surface color of $\begin{bmatrix}4.0 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.84 & 0.32 & 0.44\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.8 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.88 & 0.37 & 0.3\end{bmatrix}$, and a view direction $\begin{bmatrix}0.37 & 0.9 & 0.23\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

81. Given a point location of $\begin{bmatrix}-1.0 & 2.0 & 2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-5.0 & -5.0 & -1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

82. What is the normal to a triangle defined by vertices $\begin{bmatrix}4.0 & -5.0 & -3.0\end{bmatrix}$, $\begin{bmatrix}0.0 & -4.0 & -1.0\end{bmatrix}$, and $\begin{bmatrix}-2.0 & 0.0 & -3.0\end{bmatrix}$ (listed in the order of positive rotation)?

83. Point p has a surface color of $\begin{bmatrix}2.0 & 4.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.55 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 4.0\end{bmatrix}$ and direction $\begin{bmatrix}0.87 & 0.44 & 0.22\end{bmatrix}$, what will be the diffuse component of p's final color?

84. What is the normal to a triangle defined by vertices $\begin{bmatrix}-5.0 & 1.0 & 0.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & 0.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}0.0 & 2.0 & 3.0\end{bmatrix}$ (listed in the order of positive rotation)?

85. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & 4.0 & -5.0\end{bmatrix}$, $\begin{bmatrix}-3.0 & 1.0 & 2.0\end{bmatrix}$, and $\begin{bmatrix}3.0 & 4.0 & 2.0\end{bmatrix}$ (listed in the order of positive rotation)?

86. Point p has a surface color of $\begin{bmatrix}0.8 & 1.2 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.01 & 0.8 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.2 & 0.8 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.88 & 0.3 & 0.37\end{bmatrix}$, a view direction $\begin{bmatrix}0.78 & 0.3 & 0.55\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.0 & 1.0 & 5.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

87. Point p has a surface color of $\begin{bmatrix}1.0 & 0.5 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.2 & 0.79\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.5 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.21 & 0.84 & 0.5\end{bmatrix}$, and a view direction $\begin{bmatrix}0.2 & 0.58 & 0.79\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

88. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.69 & 0.54 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 2.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.77 & 0.37 & 0.52\end{bmatrix}$, and a view direction $\begin{bmatrix}0.58 & 0.79 & 0.2\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

89. Point p has a surface color of $\begin{bmatrix}0.0 & 1.2 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.37 & 0.77 & 0.52\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.81 & 0.55 & 0.2\end{bmatrix}$, a view direction $\begin{bmatrix}0.65 & 0.58 & 0.49\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.3 & 1.0 & 1.3\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

90. Point p has a surface color of $\begin{bmatrix}1.0 & 1.5 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.65 & 0.58 & 0.49\end{bmatrix}$. Given a light of color $\begin{bmatrix}5.0 & 1.0 & 5.0\end{bmatrix}$ and direction $\begin{bmatrix}0.21 & 0.5 & 0.84\end{bmatrix}$, a view direction $\begin{bmatrix}0.81 & 0.2 & 0.55\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.0 & 1.0 & 0.3\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

91. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 3.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.59 & 0.8 & 0.11\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.7\end{bmatrix}$ and direction $\begin{bmatrix}0.77 & 0.48 & 0.42\end{bmatrix}$, what will be the diffuse component of p's final color?

92. Point p has a surface color of $\begin{bmatrix}1.0 & 1.2 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.84 & 0.5 & 0.21\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 1.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.4 & 0.48 & 0.78\end{bmatrix}$, a view direction $\begin{bmatrix}0.58 & 0.79 & 0.2\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.2 & 0.2 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

93. Point p has a surface color of $\begin{bmatrix}2.0 & 3.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.2 & 0.79\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.2\end{bmatrix}$ and direction $\begin{bmatrix}0.22 & 0.44 & 0.87\end{bmatrix}$, and a view direction $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

94. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.68 & 0.7 & 0.22\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.35 & 0.52 & 0.78\end{bmatrix}$, what will be the diffuse component of p's final color?

95. Point p has a surface color of $\begin{bmatrix}1.0 & 0.7 & 0.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.79 & 0.58 & 0.2\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.3 & 1.0 & 1.3\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.6 & 0.01\end{bmatrix}$, a view direction $\begin{bmatrix}0.84 & 0.32 & 0.44\end{bmatrix}$, and an ambient color $\begin{bmatrix}3.0 & 1.0 & 5.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

96. What is the normal to a triangle defined by vertices $\begin{bmatrix}-2.0 & 0.0 & -2.0\end{bmatrix}$, $\begin{bmatrix}0.0 & 4.0 & -5.0\end{bmatrix}$, and $\begin{bmatrix}-4.0 & -3.0 & 2.0\end{bmatrix}$ (listed in the order of positive rotation)?

97. Point p has a surface color of $\begin{bmatrix}0.3 & 0.7 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.42 & 0.77\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.2\end{bmatrix}$ and direction $\begin{bmatrix}0.35 & 0.78 & 0.52\end{bmatrix}$, and a view direction $\begin{bmatrix}0.58 & 0.79 & 0.2\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

98. Given a point location of $\begin{bmatrix}-2.0 & 0.0 & 1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-5.0 & 4.0 & 0.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

99. Point p has a surface color of $\begin{bmatrix}2.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.37 & 0.88 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.6 & 0.8 & 0.01\end{bmatrix}$, a view direction $\begin{bmatrix}0.59 & 0.8 & 0.11\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.5 & 0.8\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

100. Given a point location of $\begin{bmatrix}-5.0 & -3.0 & 2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-5.0 & -3.0 & -1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

101. What is the normal to a triangle defined by vertices $\begin{bmatrix}4.0 & -1.0 & 3.0\end{bmatrix}$, $\begin{bmatrix}1.0 & -4.0 & -3.0\end{bmatrix}$, and $\begin{bmatrix}-2.0 & -1.0 & 3.0\end{bmatrix}$ (listed in the order of positive rotation)?

102. Point p has a surface color of $\begin{bmatrix}1.0 & 2.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.69 & 0.54\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.59 & 0.78 & 0.21\end{bmatrix}$, and a view direction $\begin{bmatrix}0.87 & 0.44 & 0.22\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

103. Point p has a surface color of $\begin{bmatrix}5.0 & 4.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.54 & 0.61\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.2 & 0.8\end{bmatrix}$ and direction $\begin{bmatrix}0.79 & 0.2 & 0.58\end{bmatrix}$, what will be the diffuse component of p's final color?

104. Point p has a surface color of $\begin{bmatrix}1.0 & 1.7 & 0.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.55 & 0.78 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 5.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.88 & 0.37 & 0.3\end{bmatrix}$, and a view direction $\begin{bmatrix}0.22 & 0.68 & 0.7\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

105. What is the normal to a triangle defined by vertices $\begin{bmatrix}-3.0 & -5.0 & 1.0\end{bmatrix}$, $\begin{bmatrix}0.0 & -2.0 & 1.0\end{bmatrix}$, and $\begin{bmatrix}-5.0 & -3.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

106. Point p has a surface color of $\begin{bmatrix}0.8 & 1.0 & 0.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.6 & 0.8 & 0.01\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.7 & 0.3 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.5 & 0.84 & 0.21\end{bmatrix}$, what will be the diffuse component of p's final color?

107. What is the normal to a triangle defined by vertices $\begin{bmatrix}2.0 & 4.0 & -5.0\end{bmatrix}$, $\begin{bmatrix}3.0 & 4.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}-2.0 & -3.0 & 2.0\end{bmatrix}$ (listed in the order of positive rotation)?

108. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 5.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.65 & 0.58 & 0.49\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.3 & 1.0 & 0.3\end{bmatrix}$ and direction $\begin{bmatrix}0.68 & 0.7 & 0.22\end{bmatrix}$, a view direction $\begin{bmatrix}0.68 & 0.22 & 0.7\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.3 & 0.7 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

109. Point p has a surface color of $\begin{bmatrix}0.3 & 1.0 & 0.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.68 & 0.42 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}4.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.49 & 0.65\end{bmatrix}$, a view direction $\begin{bmatrix}0.23 & 0.9 & 0.37\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.3 & 1.0 & 1.7\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

110. Point p has a surface color of $\begin{bmatrix}1.0 & 2.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.23 & 0.9 & 0.37\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.0 & 0.7\end{bmatrix}$ and direction $\begin{bmatrix}0.0 & 0.8 & 0.6\end{bmatrix}$, a view direction $\begin{bmatrix}0.87 & 0.22 & 0.44\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.8 & 1.0 & 0.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

111. What is the normal to a triangle defined by vertices $\begin{bmatrix}-1.0 & -4.0 & -3.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & -2.0 & 2.0\end{bmatrix}$, and $\begin{bmatrix}1.0 & -4.0 & 2.0\end{bmatrix}$ (listed in the order of positive rotation)?

112. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 0.8\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.54 & 0.58 & 0.61\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 5.0 & 5.0\end{bmatrix}$ and direction $\begin{bmatrix}0.87 & 0.22 & 0.44\end{bmatrix}$, and a view direction $\begin{bmatrix}0.2 & 0.81 & 0.55\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

113. What is the normal to a triangle defined by vertices $\begin{bmatrix}-2.0 & 4.0 & -1.0\end{bmatrix}$, $\begin{bmatrix}1.0 & 0.0 & -4.0\end{bmatrix}$, and $\begin{bmatrix}-5.0 & 4.0 & -5.0\end{bmatrix}$ (listed in the order of positive rotation)?

114. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 3.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.2 & 0.79\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.8 & 0.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.6 & 0.01 & 0.8\end{bmatrix}$, what will be the diffuse component of p's final color?

115. Given a point location of $\begin{bmatrix}-1.0 & 2.0 & 2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}0.0 & 4.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

116. What is the normal to a triangle defined by vertices $\begin{bmatrix}-5.0 & 4.0 & 1.0\end{bmatrix}$, $\begin{bmatrix}2.0 & 4.0 & -1.0\end{bmatrix}$, and $\begin{bmatrix}-2.0 & 2.0 & 3.0\end{bmatrix}$ (listed in the order of positive rotation)?

117. Point p has a surface color of $\begin{bmatrix}1.0 & 0.2 & 0.8\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.52 & 0.37 & 0.77\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.8 & 0.8 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.44 & 0.84 & 0.32\end{bmatrix}$, and a view direction $\begin{bmatrix}0.69 & 0.48 & 0.54\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

118. What is the normal to a triangle defined by vertices $\begin{bmatrix}-1.0 & 4.0 & 1.0\end{bmatrix}$, $\begin{bmatrix}0.0 & 0.0 & -5.0\end{bmatrix}$, and $\begin{bmatrix}2.0 & -1.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

119. Point p has a surface color of $\begin{bmatrix}5.0 & 1.0 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.54 & 0.69 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.5 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.01 & 0.6 & 0.8\end{bmatrix}$, a view direction $\begin{bmatrix}0.42 & 0.77 & 0.48\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.7 & 0.3 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

120. Point p has a surface color of $\begin{bmatrix}1.3 & 1.7 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.59 & 0.21\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.77 & 0.42\end{bmatrix}$, what will be the diffuse component of p's final color?

121. Given a point location of $\begin{bmatrix}-3.0 & -3.0 & 3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-4.0 & 3.0 & 0.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

122. Given a point location of $\begin{bmatrix}1.0 & -2.0 & 3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}2.0 & 1.0 & -5.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

123. What is the normal to a triangle defined by vertices $\begin{bmatrix}0.0 & -3.0 & 0.0\end{bmatrix}$, $\begin{bmatrix}2.0 & -2.0 & -3.0\end{bmatrix}$, and $\begin{bmatrix}3.0 & -3.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

124. Given a point location of $\begin{bmatrix}-5.0 & 0.0 & -3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}0.0 & -2.0 & 0.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

125. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & -1.0 & 3.0\end{bmatrix}$, $\begin{bmatrix}-5.0 & 3.0 & -5.0\end{bmatrix}$, and $\begin{bmatrix}-5.0 & -3.0 & -4.0\end{bmatrix}$ (listed in the order of positive rotation)?

126. Point p has a surface color of $\begin{bmatrix}1.0 & 0.7 & 0.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.7 & 0.68 & 0.22\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.7 & 0.22 & 0.68\end{bmatrix}$, what will be the diffuse component of p's final color?

127. What is the normal to a triangle defined by vertices $\begin{bmatrix}0.0 & 2.0 & -3.0\end{bmatrix}$, $\begin{bmatrix}4.0 & -1.0 & -5.0\end{bmatrix}$, and $\begin{bmatrix}2.0 & -3.0 & -4.0\end{bmatrix}$ (listed in the order of positive rotation)?

128. Given a point location of $\begin{bmatrix}-1.0 & -1.0 & 1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & -4.0 & 3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

129. Point p has a surface color of $\begin{bmatrix}1.7 & 1.3 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.32 & 0.84 & 0.44\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.3 & 1.0 & 0.7\end{bmatrix}$ and direction $\begin{bmatrix}0.4 & 0.48 & 0.78\end{bmatrix}$, what will be the diffuse component of p's final color?

130. Given a point location of $\begin{bmatrix}0.0 & 1.0 & 0.0\end{bmatrix}$ and a light location of $\begin{bmatrix}3.0 & -1.0 & -5.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

131. What is the normal to a triangle defined by vertices $\begin{bmatrix}-5.0 & -4.0 & 2.0\end{bmatrix}$, $\begin{bmatrix}-5.0 & -1.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}-1.0 & -2.0 & -3.0\end{bmatrix}$ (listed in the order of positive rotation)?

132. What is the normal to a triangle defined by vertices $\begin{bmatrix}4.0 & 1.0 & -4.0\end{bmatrix}$, $\begin{bmatrix}3.0 & 2.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}-2.0 & -5.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

133. Point p has a surface color of $\begin{bmatrix}0.2 & 1.0 & 1.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.6 & 0.01 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 2.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.68 & 0.22 & 0.7\end{bmatrix}$, what will be the diffuse component of p's final color?

134. Point p has a surface color of $\begin{bmatrix}1.0 & 5.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.21 & 0.78 & 0.59\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 1.7 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$, and a view direction $\begin{bmatrix}0.6 & 0.68 & 0.42\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

135. Given a point location of $\begin{bmatrix}-3.0 & -3.0 & -5.0\end{bmatrix}$ and a light location of $\begin{bmatrix}1.0 & -1.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

136. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.0 & 0.8 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 0.7 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.4 & 0.78 & 0.48\end{bmatrix}$, and a view direction $\begin{bmatrix}0.3 & 0.88 & 0.37\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

137. Given a point location of $\begin{bmatrix}1.0 & 3.0 & -2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}2.0 & -1.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

138. Point p has a surface color of $\begin{bmatrix}1.0 & 3.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.42 & 0.77 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.3\end{bmatrix}$ and direction $\begin{bmatrix}0.22 & 0.68 & 0.7\end{bmatrix}$, and a view direction $\begin{bmatrix}0.79 & 0.2 & 0.58\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

139. Given a point location of $\begin{bmatrix}-4.0 & -3.0 & 0.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-1.0 & -1.0 & 4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

140. Point p has a surface color of $\begin{bmatrix}1.7 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.9 & 0.37 & 0.23\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.7 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.52 & 0.77 & 0.37\end{bmatrix}$, a view direction $\begin{bmatrix}0.78 & 0.21 & 0.59\end{bmatrix}$, and an ambient color $\begin{bmatrix}5.0 & 1.0 & 4.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

141. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.52 & 0.35 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 1.7 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.52 & 0.35\end{bmatrix}$, and a view direction $\begin{bmatrix}0.78 & 0.21 & 0.59\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

142. Point p has a surface color of $\begin{bmatrix}2.5 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.21 & 0.84 & 0.5\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 1.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.35 & 0.78 & 0.52\end{bmatrix}$, a view direction $\begin{bmatrix}0.77 & 0.52 & 0.37\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.0 & 1.0 & 0.8\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

143. Given a point location of $\begin{bmatrix}-2.0 & -3.0 & 4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-1.0 & 1.0 & -3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

144. Point p has a surface color of $\begin{bmatrix}1.3 & 1.0 & 0.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.87 & 0.44 & 0.22\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 2.0 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.42 & 0.48 & 0.77\end{bmatrix}$, and a view direction $\begin{bmatrix}0.52 & 0.37 & 0.77\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

145. Given a point location of $\begin{bmatrix}4.0 & -4.0 & -5.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & -3.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

146. Given a point location of $\begin{bmatrix}1.0 & -4.0 & 2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-2.0 & 0.0 & 4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

147. Point p has a surface color of $\begin{bmatrix}1.2 & 0.2 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.0 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}3.0 & 1.0 & 4.0\end{bmatrix}$ and direction $\begin{bmatrix}0.37 & 0.77 & 0.52\end{bmatrix}$, what will be the diffuse component of p's final color?

148. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 4.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.84 & 0.44 & 0.32\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.3 & 0.3 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.37 & 0.88\end{bmatrix}$, what will be the diffuse component of p's final color?

149. Point p has a surface color of $\begin{bmatrix}1.0 & 0.8 & 0.8\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.42 & 0.68 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}5.0 & 1.0 & 3.0\end{bmatrix}$ and direction $\begin{bmatrix}0.35 & 0.52 & 0.78\end{bmatrix}$, what will be the diffuse component of p's final color?

150. What is the normal to a triangle defined by vertices $\begin{bmatrix}3.0 & -4.0 & -4.0\end{bmatrix}$, $\begin{bmatrix}0.0 & -2.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}-4.0 & -3.0 & -1.0\end{bmatrix}$ (listed in the order of positive rotation)?

151. Point p has a surface color of $\begin{bmatrix}0.2 & 1.0 & 1.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.78 & 0.4\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.55 & 0.78 & 0.3\end{bmatrix}$, and a view direction $\begin{bmatrix}0.22 & 0.7 & 0.68\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

152. Point p has a surface color of $\begin{bmatrix}2.0 & 3.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.6 & 0.01\end{bmatrix}$. Given a light of color $\begin{bmatrix}5.0 & 3.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.49 & 0.65 & 0.58\end{bmatrix}$, what will be the diffuse component of p's final color?

153. Given a point location of $\begin{bmatrix}-4.0 & 2.0 & 0.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-4.0 & -1.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

154. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & -3.0 & 2.0\end{bmatrix}$, $\begin{bmatrix}-5.0 & -2.0 & -3.0\end{bmatrix}$, and $\begin{bmatrix}-3.0 & 2.0 & -4.0\end{bmatrix}$ (listed in the order of positive rotation)?

155. Point p has a surface color of $\begin{bmatrix}0.7 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.6 & 0.68 & 0.42\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.5 & 1.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.52 & 0.78 & 0.35\end{bmatrix}$, what will be the diffuse component of p's final color?

156. What is the normal to a triangle defined by vertices $\begin{bmatrix}3.0 & -1.0 & 2.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & -3.0 & 1.0\end{bmatrix}$, and $\begin{bmatrix}1.0 & -4.0 & -5.0\end{bmatrix}$ (listed in the order of positive rotation)?

157. What is the normal to a triangle defined by vertices $\begin{bmatrix}-4.0 & -4.0 & -4.0\end{bmatrix}$, $\begin{bmatrix}-5.0 & 1.0 & 2.0\end{bmatrix}$, and $\begin{bmatrix}-3.0 & 0.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

158. Given a point location of $\begin{bmatrix}3.0 & -2.0 & -1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-1.0 & 2.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

159. Point p has a surface color of $\begin{bmatrix}0.3 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.23 & 0.37 & 0.9\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.01 & 0.6\end{bmatrix}$, what will be the diffuse component of p's final color?

160. Point p has a surface color of $\begin{bmatrix}1.2 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.9 & 0.23 & 0.37\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 0.8 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.42 & 0.48 & 0.77\end{bmatrix}$, a view direction $\begin{bmatrix}0.84 & 0.5 & 0.21\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.7 & 1.0 & 0.7\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

161. Given a point location of $\begin{bmatrix}-3.0 & -1.0 & -4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-3.0 & -4.0 & -1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

162. What is the normal to a triangle defined by vertices $\begin{bmatrix}2.0 & 4.0 & -5.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & 2.0 & 1.0\end{bmatrix}$, and $\begin{bmatrix}-4.0 & -4.0 & 3.0\end{bmatrix}$ (listed in the order of positive rotation)?

163. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & 2.0 & -3.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & -5.0 & -3.0\end{bmatrix}$, and $\begin{bmatrix}4.0 & 3.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

164. Point p has a surface color of $\begin{bmatrix}4.0 & 4.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.35 & 0.52 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.0 & 0.6 & 0.8\end{bmatrix}$, a view direction $\begin{bmatrix}0.78 & 0.4 & 0.48\end{bmatrix}$, and an ambient color $\begin{bmatrix}4.0 & 1.0 & 0.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

165. Point p has a surface color of $\begin{bmatrix}0.5 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.3 & 0.55 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}4.0 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.22 & 0.7 & 0.68\end{bmatrix}$, and a view direction $\begin{bmatrix}0.78 & 0.35 & 0.52\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

166. Point p has a surface color of $\begin{bmatrix}0.0 & 0.8 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.6 & 0.0 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}3.0 & 1.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.5 & 0.21 & 0.84\end{bmatrix}$, and a view direction $\begin{bmatrix}0.58 & 0.2 & 0.79\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

167. What is the normal to a triangle defined by vertices $\begin{bmatrix}-5.0 & 2.0 & -1.0\end{bmatrix}$, $\begin{bmatrix}-5.0 & 4.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}2.0 & 3.0 & -5.0\end{bmatrix}$ (listed in the order of positive rotation)?

168. Given a point location of $\begin{bmatrix}1.0 & 2.0 & -3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}2.0 & 0.0 & -2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

169. What is the normal to a triangle defined by vertices $\begin{bmatrix}-2.0 & 4.0 & -4.0\end{bmatrix}$, $\begin{bmatrix}2.0 & -5.0 & -1.0\end{bmatrix}$, and $\begin{bmatrix}3.0 & 0.0 & 0.0\end{bmatrix}$ (listed in the order of positive rotation)?

170. Given a point location of $\begin{bmatrix}0.0 & -4.0 & -5.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-3.0 & -4.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

171. Point p has a surface color of $\begin{bmatrix}1.0 & 2.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.23 & 0.37 & 0.9\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 2.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.59 & 0.78 & 0.21\end{bmatrix}$, and a view direction $\begin{bmatrix}0.48 & 0.77 & 0.42\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

172. Point p has a surface color of $\begin{bmatrix}0.5 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.35 & 0.52\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.8 & 0.8\end{bmatrix}$ and direction $\begin{bmatrix}0.61 & 0.54 & 0.58\end{bmatrix}$, a view direction $\begin{bmatrix}0.2 & 0.55 & 0.81\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.5 & 1.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

173. Point p has a surface color of $\begin{bmatrix}0.2 & 1.0 & 0.8\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.11 & 0.59 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 2.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.2 & 0.79 & 0.58\end{bmatrix}$, and a view direction $\begin{bmatrix}0.8 & 0.6 & 0.0\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

174. Point p has a surface color of $\begin{bmatrix}1.0 & 2.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.6 & 0.0 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.2 & 1.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.59 & 0.21\end{bmatrix}$, a view direction $\begin{bmatrix}0.59 & 0.11 & 0.8\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.7 & 1.0 & 1.3\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

175. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.5 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.37 & 0.52 & 0.77\end{bmatrix}$, a view direction $\begin{bmatrix}0.6 & 0.42 & 0.68\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.3 & 0.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

176. Point p has a surface color of $\begin{bmatrix}2.0 & 4.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.11 & 0.8 & 0.59\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 1.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.55 & 0.78\end{bmatrix}$, what will be the diffuse component of p's final color?

177. What is the normal to a triangle defined by vertices $\begin{bmatrix}0.0 & 4.0 & -3.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & -1.0 & -5.0\end{bmatrix}$, and $\begin{bmatrix}4.0 & 4.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

178. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & -5.0 & 2.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & 1.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}1.0 & 4.0 & -5.0\end{bmatrix}$ (listed in the order of positive rotation)?

179. Point p has a surface color of $\begin{bmatrix}1.0 & 1.3 & 1.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.59 & 0.8 & 0.11\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 1.0 & 2.5\end{bmatrix}$ and direction $\begin{bmatrix}0.52 & 0.37 & 0.77\end{bmatrix}$, what will be the diffuse component of p's final color?

180. What is the normal to a triangle defined by vertices $\begin{bmatrix}-2.0 & -3.0 & 3.0\end{bmatrix}$, $\begin{bmatrix}0.0 & -3.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}-4.0 & 0.0 & -5.0\end{bmatrix}$ (listed in the order of positive rotation)?

181. What is the normal to a triangle defined by vertices $\begin{bmatrix}2.0 & 3.0 & -5.0\end{bmatrix}$, $\begin{bmatrix}-3.0 & -5.0 & 2.0\end{bmatrix}$, and $\begin{bmatrix}-3.0 & -4.0 & 3.0\end{bmatrix}$ (listed in the order of positive rotation)?

182. Point p has a surface color of $\begin{bmatrix}1.0 & 0.3 & 1.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.52 & 0.77 & 0.37\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.2 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.78 & 0.4\end{bmatrix}$, a view direction $\begin{bmatrix}0.44 & 0.32 & 0.84\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.3 & 0.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

183. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 5.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.4 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 3.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.4 & 0.48 & 0.78\end{bmatrix}$, a view direction $\begin{bmatrix}0.88 & 0.37 & 0.3\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.3 & 1.0 & 1.3\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

184. What is the normal to a triangle defined by vertices $\begin{bmatrix}-4.0 & 2.0 & 0.0\end{bmatrix}$, $\begin{bmatrix}3.0 & -5.0 & -3.0\end{bmatrix}$, and $\begin{bmatrix}-4.0 & 0.0 & 3.0\end{bmatrix}$ (listed in the order of positive rotation)?

185. Point p has a surface color of $\begin{bmatrix}1.0 & 5.0 & 3.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.2 & 0.81 & 0.55\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.37 & 0.23 & 0.9\end{bmatrix}$, and a view direction $\begin{bmatrix}0.8 & 0.11 & 0.59\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

186. Point p has a surface color of $\begin{bmatrix}0.8 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.65 & 0.49 & 0.58\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 5.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.78 & 0.55\end{bmatrix}$, a view direction $\begin{bmatrix}0.8 & 0.59 & 0.11\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.3 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

187. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.4 & 0.48 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.2 & 0.2\end{bmatrix}$ and direction $\begin{bmatrix}0.88 & 0.37 & 0.3\end{bmatrix}$, a view direction $\begin{bmatrix}0.11 & 0.8 & 0.59\end{bmatrix}$, and an ambient color $\begin{bmatrix}3.0 & 1.0 & 0.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

188. What is the normal to a triangle defined by vertices $\begin{bmatrix}3.0 & 2.0 & -1.0\end{bmatrix}$, $\begin{bmatrix}3.0 & 3.0 & -5.0\end{bmatrix}$, and $\begin{bmatrix}-4.0 & 2.0 & -1.0\end{bmatrix}$ (listed in the order of positive rotation)?

189. Point p has a surface color of $\begin{bmatrix}0.5 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.21 & 0.78 & 0.59\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 3.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.0 & 0.8 & 0.6\end{bmatrix}$, and a view direction $\begin{bmatrix}0.55 & 0.81 & 0.2\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

190. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.52 & 0.35 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.3 & 1.0 & 0.3\end{bmatrix}$ and direction $\begin{bmatrix}0.6 & 0.0 & 0.8\end{bmatrix}$, what will be the diffuse component of p's final color?

191. Point p has a surface color of $\begin{bmatrix}1.0 & 0.8 & 0.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.3 & 0.37 & 0.88\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.5 & 0.21 & 0.84\end{bmatrix}$, what will be the diffuse component of p's final color?

192. What is the normal to a triangle defined by vertices $\begin{bmatrix}-1.0 & 3.0 & -3.0\end{bmatrix}$, $\begin{bmatrix}-2.0 & -3.0 & 1.0\end{bmatrix}$, and $\begin{bmatrix}-4.0 & -1.0 & 1.0\end{bmatrix}$ (listed in the order of positive rotation)?

193. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 0.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.2 & 0.79 & 0.58\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.0 & 4.0\end{bmatrix}$ and direction $\begin{bmatrix}0.77 & 0.37 & 0.52\end{bmatrix}$, what will be the diffuse component of p's final color?

194. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & -2.0 & 1.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & 3.0 & -1.0\end{bmatrix}$, and $\begin{bmatrix}1.0 & -4.0 & -4.0\end{bmatrix}$ (listed in the order of positive rotation)?

195. Point p has a surface color of $\begin{bmatrix}0.0 & 5.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.35 & 0.52 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.6 & 0.0 & 0.8\end{bmatrix}$, what will be the diffuse component of p's final color?

196. What is the normal to a triangle defined by vertices $\begin{bmatrix}-4.0 & 3.0 & 0.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & -4.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}-1.0 & 2.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

197. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.52 & 0.35 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 0.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.4 & 0.48 & 0.78\end{bmatrix}$, a view direction $\begin{bmatrix}0.78 & 0.55 & 0.3\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.3 & 0.7\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

198. Given a point location of $\begin{bmatrix}1.0 & 2.0 & -2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}0.0 & 4.0 & -2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

199. Point p has a surface color of $\begin{bmatrix}1.5 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.35 & 0.52 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}5.0 & 3.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.84 & 0.32 & 0.44\end{bmatrix}$, and a view direction $\begin{bmatrix}0.59 & 0.8 & 0.11\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

200. What is the normal to a triangle defined by vertices $\begin{bmatrix}-4.0 & 0.0 & -4.0\end{bmatrix}$, $\begin{bmatrix}2.0 & 0.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}-3.0 & -4.0 & 0.0\end{bmatrix}$ (listed in the order of positive rotation)?

201. Point p has a surface color of $\begin{bmatrix}1.0 & 1.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.77 & 0.42 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}3.0 & 3.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.4 & 0.78\end{bmatrix}$, and a view direction $\begin{bmatrix}0.58 & 0.2 & 0.79\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

202. Point p has a surface color of $\begin{bmatrix}0.3 & 1.0 & 0.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.21 & 0.59 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.6 & 0.0\end{bmatrix}$, and a view direction $\begin{bmatrix}0.32 & 0.44 & 0.84\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

203. Given a point location of $\begin{bmatrix}-3.0 & 0.0 & -5.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-4.0 & 4.0 & -1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

204. What is the normal to a triangle defined by vertices $\begin{bmatrix}0.0 & 1.0 & -4.0\end{bmatrix}$, $\begin{bmatrix}0.0 & 4.0 & -5.0\end{bmatrix}$, and $\begin{bmatrix}-4.0 & -5.0 & -4.0\end{bmatrix}$ (listed in the order of positive rotation)?

205. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & -2.0 & 0.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & 2.0 & -4.0\end{bmatrix}$, and $\begin{bmatrix}-4.0 & 3.0 & -4.0\end{bmatrix}$ (listed in the order of positive rotation)?

206. Given a point location of $\begin{bmatrix}2.0 & -1.0 & 1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-5.0 & 3.0 & 2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

207. Given a point location of $\begin{bmatrix}2.0 & 4.0 & 1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-4.0 & -2.0 & -3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

208. Point p has a surface color of $\begin{bmatrix}1.7 & 1.0 & 0.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.0 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 2.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.52 & 0.78 & 0.35\end{bmatrix}$, a view direction $\begin{bmatrix}0.22 & 0.44 & 0.87\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.0 & 1.0 & 1.2\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

209. Given a point location of $\begin{bmatrix}-5.0 & -2.0 & 1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}0.0 & 4.0 & 1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

210. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 1.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.42 & 0.6 & 0.68\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.3 & 1.3 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.77 & 0.52 & 0.37\end{bmatrix}$, a view direction $\begin{bmatrix}0.48 & 0.78 & 0.4\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.0 & 1.0 & 0.5\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

211. Point p has a surface color of $\begin{bmatrix}1.0 & 0.2 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.6 & 0.01 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.7 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.88 & 0.3 & 0.37\end{bmatrix}$, and a view direction $\begin{bmatrix}0.7 & 0.22 & 0.68\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

212. Point p has a surface color of $\begin{bmatrix}1.0 & 0.3 & 1.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.79 & 0.58 & 0.2\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 1.0 & 1.5\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.49 & 0.65\end{bmatrix}$, what will be the diffuse component of p's final color?

213. What is the normal to a triangle defined by vertices $\begin{bmatrix}-4.0 & 3.0 & -4.0\end{bmatrix}$, $\begin{bmatrix}1.0 & 2.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}-1.0 & 3.0 & 0.0\end{bmatrix}$ (listed in the order of positive rotation)?

214. Point p has a surface color of $\begin{bmatrix}3.0 & 1.0 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.21 & 0.59 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.3\end{bmatrix}$ and direction $\begin{bmatrix}0.68 & 0.42 & 0.6\end{bmatrix}$, and a view direction $\begin{bmatrix}0.8 & 0.01 & 0.6\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

215. What is the normal to a triangle defined by vertices $\begin{bmatrix}-3.0 & 2.0 & 3.0\end{bmatrix}$, $\begin{bmatrix}0.0 & -3.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}-4.0 & -1.0 & -1.0\end{bmatrix}$ (listed in the order of positive rotation)?

216. Point p has a surface color of $\begin{bmatrix}1.0 & 1.2 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.78 & 0.4\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 1.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.78 & 0.55\end{bmatrix}$, a view direction $\begin{bmatrix}0.42 & 0.6 & 0.68\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.2 & 0.5 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

217. Given a point location of $\begin{bmatrix}-5.0 & 0.0 & -2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}1.0 & -5.0 & -2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

218. Point p has a surface color of $\begin{bmatrix}0.8 & 0.2 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.81 & 0.55 & 0.2\end{bmatrix}$. Given a light of color $\begin{bmatrix}4.0 & 5.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.65 & 0.58 & 0.49\end{bmatrix}$, what will be the diffuse component of p's final color?

219. Point p has a surface color of $\begin{bmatrix}1.0 & 0.8 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.9 & 0.23 & 0.37\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.42 & 0.6 & 0.68\end{bmatrix}$, a view direction $\begin{bmatrix}0.01 & 0.6 & 0.8\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 2.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

220. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & -4.0 & -1.0\end{bmatrix}$, $\begin{bmatrix}3.0 & -5.0 & -5.0\end{bmatrix}$, and $\begin{bmatrix}1.0 & -3.0 & 0.0\end{bmatrix}$ (listed in the order of positive rotation)?

221. What is the normal to a triangle defined by vertices $\begin{bmatrix}-4.0 & -1.0 & 0.0\end{bmatrix}$, $\begin{bmatrix}4.0 & -5.0 & -3.0\end{bmatrix}$, and $\begin{bmatrix}-3.0 & -3.0 & 3.0\end{bmatrix}$ (listed in the order of positive rotation)?

222. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.65 & 0.49 & 0.58\end{bmatrix}$. Given a light of color $\begin{bmatrix}4.0 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.84 & 0.5 & 0.21\end{bmatrix}$, and a view direction $\begin{bmatrix}0.79 & 0.2 & 0.58\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

223. Point p has a surface color of $\begin{bmatrix}1.7 & 1.0 & 1.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.44 & 0.84 & 0.32\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.2 & 0.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.54 & 0.69 & 0.48\end{bmatrix}$, a view direction $\begin{bmatrix}0.87 & 0.22 & 0.44\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.7 & 0.7 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

224. Point p has a surface color of $\begin{bmatrix}1.2 & 1.0 & 0.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.55 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 4.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.54 & 0.58 & 0.61\end{bmatrix}$, and a view direction $\begin{bmatrix}0.65 & 0.49 & 0.58\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

225. Point p has a surface color of $\begin{bmatrix}1.0 & 0.3 & 0.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.54 & 0.61 & 0.58\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.0 & 0.6 & 0.8\end{bmatrix}$, and a view direction $\begin{bmatrix}0.3 & 0.78 & 0.55\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

226. Point p has a surface color of $\begin{bmatrix}0.3 & 1.3 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.3 & 0.55 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 4.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.88 & 0.37\end{bmatrix}$, what will be the diffuse component of p's final color?

227. Given a point location of $\begin{bmatrix}2.0 & 1.0 & -3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}3.0 & -2.0 & 4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

228. Point p has a surface color of $\begin{bmatrix}0.5 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.52 & 0.37 & 0.77\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 5.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.77 & 0.52 & 0.37\end{bmatrix}$, what will be the diffuse component of p's final color?

229. Point p has a surface color of $\begin{bmatrix}1.0 & 0.7 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.49 & 0.65\end{bmatrix}$. Given a light of color $\begin{bmatrix}5.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.81 & 0.55 & 0.2\end{bmatrix}$, and a view direction $\begin{bmatrix}0.3 & 0.37 & 0.88\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

230. Point p has a surface color of $\begin{bmatrix}0.2 & 1.0 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.37 & 0.9 & 0.23\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.2 & 0.8 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.0 & 0.6 & 0.8\end{bmatrix}$, a view direction $\begin{bmatrix}0.68 & 0.6 & 0.42\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 0.8\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

231. Given a point location of $\begin{bmatrix}2.0 & -2.0 & -1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}2.0 & -3.0 & -2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

232. Given a point location of $\begin{bmatrix}-5.0 & -2.0 & 4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}2.0 & -2.0 & -3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

233. Given a point location of $\begin{bmatrix}2.0 & 0.0 & -4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-2.0 & -3.0 & 0.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

234. Given a point location of $\begin{bmatrix}2.0 & -2.0 & -4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-1.0 & -3.0 & 2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

235. Given a point location of $\begin{bmatrix}1.0 & 0.0 & -3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}0.0 & 2.0 & 1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

236. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.01 & 0.8 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 2.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.54 & 0.48 & 0.69\end{bmatrix}$, a view direction $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.2 & 0.8 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

237. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 0.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.22 & 0.44 & 0.87\end{bmatrix}$. Given a light of color $\begin{bmatrix}3.0 & 4.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.88 & 0.37 & 0.3\end{bmatrix}$, and a view direction $\begin{bmatrix}0.37 & 0.88 & 0.3\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

238. Point p has a surface color of $\begin{bmatrix}1.0 & 1.3 & 1.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.42 & 0.68 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.2 & 0.2\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.35 & 0.52\end{bmatrix}$, a view direction $\begin{bmatrix}0.68 & 0.22 & 0.7\end{bmatrix}$, and an ambient color $\begin{bmatrix}2.0 & 2.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

239. Given a point location of $\begin{bmatrix}-4.0 & 1.0 & -5.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & -1.0 & -2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

240. Point p has a surface color of $\begin{bmatrix}1.0 & 0.5 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.37 & 0.3 & 0.88\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.3 & 1.3 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.69 & 0.54 & 0.48\end{bmatrix}$, a view direction $\begin{bmatrix}0.68 & 0.7 & 0.22\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.7 & 0.3 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

241. Point p has a surface color of $\begin{bmatrix}0.7 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.23 & 0.9 & 0.37\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.2 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.01 & 0.6 & 0.8\end{bmatrix}$, what will be the diffuse component of p's final color?

242. Point p has a surface color of $\begin{bmatrix}1.0 & 5.0 & 4.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.0 & 0.6 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.7 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.59 & 0.8 & 0.11\end{bmatrix}$, and a view direction $\begin{bmatrix}0.55 & 0.78 & 0.3\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

243. What is the normal to a triangle defined by vertices $\begin{bmatrix}3.0 & 1.0 & 1.0\end{bmatrix}$, $\begin{bmatrix}3.0 & 1.0 & 3.0\end{bmatrix}$, and $\begin{bmatrix}0.0 & -2.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

244. Point p has a surface color of $\begin{bmatrix}0.7 & 0.3 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.44 & 0.87 & 0.22\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.8 & 0.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.21 & 0.78 & 0.59\end{bmatrix}$, and a view direction $\begin{bmatrix}0.3 & 0.55 & 0.78\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

245. What is the normal to a triangle defined by vertices $\begin{bmatrix}-5.0 & 3.0 & -3.0\end{bmatrix}$, $\begin{bmatrix}-5.0 & 3.0 & 2.0\end{bmatrix}$, and $\begin{bmatrix}2.0 & 0.0 & 3.0\end{bmatrix}$ (listed in the order of positive rotation)?

246. Point p has a surface color of $\begin{bmatrix}1.0 & 2.0 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.84 & 0.5 & 0.21\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$, a view direction $\begin{bmatrix}0.48 & 0.77 & 0.42\end{bmatrix}$, and an ambient color $\begin{bmatrix}2.0 & 1.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

247. Point p has a surface color of $\begin{bmatrix}2.0 & 1.0 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.54 & 0.69 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 2.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.84 & 0.32 & 0.44\end{bmatrix}$, and a view direction $\begin{bmatrix}0.87 & 0.44 & 0.22\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

248. What is the normal to a triangle defined by vertices $\begin{bmatrix}-5.0 & -2.0 & -1.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & -4.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}4.0 & -2.0 & 1.0\end{bmatrix}$ (listed in the order of positive rotation)?

249. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.49 & 0.65\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.7 & 0.7\end{bmatrix}$ and direction $\begin{bmatrix}0.77 & 0.52 & 0.37\end{bmatrix}$, and a view direction $\begin{bmatrix}0.5 & 0.21 & 0.84\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

250. Given a point location of $\begin{bmatrix}-2.0 & 4.0 & -5.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-1.0 & -4.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

251. What is the normal to a triangle defined by vertices $\begin{bmatrix}-4.0 & 4.0 & 4.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & -1.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}-1.0 & -4.0 & 4.0\end{bmatrix}$ (listed in the order of positive rotation)?

252. What is the normal to a triangle defined by vertices $\begin{bmatrix}-3.0 & -5.0 & 3.0\end{bmatrix}$, $\begin{bmatrix}3.0 & 0.0 & -3.0\end{bmatrix}$, and $\begin{bmatrix}0.0 & 0.0 & 4.0\end{bmatrix}$ (listed in the order of positive rotation)?

253. Point p has a surface color of $\begin{bmatrix}1.0 & 0.5 & 1.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.69 & 0.54\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.5 & 2.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.78 & 0.55\end{bmatrix}$, a view direction $\begin{bmatrix}0.3 & 0.55 & 0.78\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 3.0 & 5.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

254. Point p has a surface color of $\begin{bmatrix}0.5 & 1.0 & 0.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.11 & 0.59\end{bmatrix}$. Given a light of color $\begin{bmatrix}5.0 & 3.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.44 & 0.32 & 0.84\end{bmatrix}$, and a view direction $\begin{bmatrix}0.79 & 0.2 & 0.58\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

255. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.81 & 0.2 & 0.55\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 1.0 & 2.5\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.37 & 0.88\end{bmatrix}$, what will be the diffuse component of p's final color?

256. What is the normal to a triangle defined by vertices $\begin{bmatrix}-5.0 & -1.0 & 1.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & -5.0 & -3.0\end{bmatrix}$, and $\begin{bmatrix}2.0 & 2.0 & -3.0\end{bmatrix}$ (listed in the order of positive rotation)?

257. What is the normal to a triangle defined by vertices $\begin{bmatrix}0.0 & -4.0 & -2.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & -2.0 & 2.0\end{bmatrix}$, and $\begin{bmatrix}-2.0 & -1.0 & -1.0\end{bmatrix}$ (listed in the order of positive rotation)?

258. Point p has a surface color of $\begin{bmatrix}1.0 & 0.7 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.8 & 1.0 & 0.2\end{bmatrix}$ and direction $\begin{bmatrix}0.37 & 0.88 & 0.3\end{bmatrix}$, a view direction $\begin{bmatrix}0.48 & 0.69 & 0.54\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.2 & 1.0 & 1.2\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

259. Given a point location of $\begin{bmatrix}2.0 & 4.0 & 3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}3.0 & 2.0 & 0.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

260. What is the normal to a triangle defined by vertices $\begin{bmatrix}-5.0 & 1.0 & -1.0\end{bmatrix}$, $\begin{bmatrix}0.0 & 4.0 & -1.0\end{bmatrix}$, and $\begin{bmatrix}-5.0 & -1.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

261. Point p has a surface color of $\begin{bmatrix}2.0 & 3.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.23 & 0.9 & 0.37\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 1.7 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.6 & 0.0\end{bmatrix}$, a view direction $\begin{bmatrix}0.69 & 0.48 & 0.54\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.2 & 0.2\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

262. Point p has a surface color of $\begin{bmatrix}4.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.37 & 0.9 & 0.23\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.8\end{bmatrix}$ and direction $\begin{bmatrix}0.44 & 0.84 & 0.32\end{bmatrix}$, and a view direction $\begin{bmatrix}0.84 & 0.44 & 0.32\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

263. Point p has a surface color of $\begin{bmatrix}5.0 & 4.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.55 & 0.2 & 0.81\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.3 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.49 & 0.65 & 0.58\end{bmatrix}$, a view direction $\begin{bmatrix}0.6 & 0.01 & 0.8\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 4.0 & 0.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

264. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 3.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.3 & 1.7 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.2 & 0.81 & 0.55\end{bmatrix}$, a view direction $\begin{bmatrix}0.78 & 0.48 & 0.4\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.8 & 1.0 & 0.5\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

265. Point p has a surface color of $\begin{bmatrix}1.0 & 1.2 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.21 & 0.84 & 0.5\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 2.0 & 4.0\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.65 & 0.49\end{bmatrix}$, what will be the diffuse component of p's final color?

266. What is the normal to a triangle defined by vertices $\begin{bmatrix}0.0 & 0.0 & 2.0\end{bmatrix}$, $\begin{bmatrix}4.0 & -3.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}0.0 & -4.0 & -5.0\end{bmatrix}$ (listed in the order of positive rotation)?

267. Point p has a surface color of $\begin{bmatrix}1.7 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.48 & 0.4\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 2.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.55 & 0.78\end{bmatrix}$, what will be the diffuse component of p's final color?

268. Point p has a surface color of $\begin{bmatrix}3.0 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.59 & 0.21\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 4.0 & 3.0\end{bmatrix}$ and direction $\begin{bmatrix}0.21 & 0.5 & 0.84\end{bmatrix}$, what will be the diffuse component of p's final color?

269. Point p has a surface color of $\begin{bmatrix}1.0 & 1.3 & 1.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.6 & 0.8 & 0.0\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.2 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.65 & 0.49 & 0.58\end{bmatrix}$, a view direction $\begin{bmatrix}0.54 & 0.48 & 0.69\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.3 & 1.0 & 1.7\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

270. Given a point location of $\begin{bmatrix}-5.0 & 2.0 & -2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-1.0 & 4.0 & 4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

271. Point p has a surface color of $\begin{bmatrix}0.3 & 1.3 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.79 & 0.2\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.7\end{bmatrix}$ and direction $\begin{bmatrix}0.55 & 0.78 & 0.3\end{bmatrix}$, and a view direction $\begin{bmatrix}0.11 & 0.59 & 0.8\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

272. Point p has a surface color of $\begin{bmatrix}0.2 & 1.0 & 0.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.88 & 0.37 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.37 & 0.88\end{bmatrix}$, a view direction $\begin{bmatrix}0.58 & 0.2 & 0.79\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.5 & 1.0 & 1.5\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

273. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.79 & 0.2 & 0.58\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.7 & 0.7\end{bmatrix}$ and direction $\begin{bmatrix}0.35 & 0.78 & 0.52\end{bmatrix}$, and a view direction $\begin{bmatrix}0.78 & 0.3 & 0.55\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

274. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.52 & 0.78 & 0.35\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 2.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.55 & 0.78 & 0.3\end{bmatrix}$, what will be the diffuse component of p's final color?

275. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & 2.0 & -5.0\end{bmatrix}$, $\begin{bmatrix}-5.0 & -4.0 & 2.0\end{bmatrix}$, and $\begin{bmatrix}-5.0 & -4.0 & 2.0\end{bmatrix}$ (listed in the order of positive rotation)?

276. Point p has a surface color of $\begin{bmatrix}0.0 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.55 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.2 & 1.0 & 1.2\end{bmatrix}$ and direction $\begin{bmatrix}0.59 & 0.21 & 0.78\end{bmatrix}$, what will be the diffuse component of p's final color?

277. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.69 & 0.54 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.23 & 0.9 & 0.37\end{bmatrix}$, and a view direction $\begin{bmatrix}0.69 & 0.54 & 0.48\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

278. Point p has a surface color of $\begin{bmatrix}0.8 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.54 & 0.61\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.2 & 1.0 & 1.2\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.3 & 0.55\end{bmatrix}$, a view direction $\begin{bmatrix}0.35 & 0.52 & 0.78\end{bmatrix}$, and an ambient color $\begin{bmatrix}4.0 & 4.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

279. Given a point location of $\begin{bmatrix}-5.0 & 3.0 & -3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-5.0 & -4.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

280. Point p has a surface color of $\begin{bmatrix}0.0 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.69 & 0.54 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.22 & 0.7 & 0.68\end{bmatrix}$, a view direction $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.0 & 4.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

281. Point p has a surface color of $\begin{bmatrix}0.2 & 1.0 & 0.8\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.84 & 0.5 & 0.21\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.37 & 0.88 & 0.3\end{bmatrix}$, and a view direction $\begin{bmatrix}0.54 & 0.58 & 0.61\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

282. Point p has a surface color of $\begin{bmatrix}1.2 & 0.8 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.3 & 0.37 & 0.88\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.54 & 0.61 & 0.58\end{bmatrix}$, what will be the diffuse component of p's final color?

283. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.3 & 0.78 & 0.55\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.8 & 1.0 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.68 & 0.22 & 0.7\end{bmatrix}$, a view direction $\begin{bmatrix}0.5 & 0.84 & 0.21\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.3 & 1.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

284. Point p has a surface color of $\begin{bmatrix}2.0 & 5.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.48 & 0.4\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.2 & 0.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.78 & 0.55\end{bmatrix}$, what will be the diffuse component of p's final color?

285. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 1.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.3 & 0.37 & 0.88\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.61 & 0.54\end{bmatrix}$, a view direction $\begin{bmatrix}0.2 & 0.79 & 0.58\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.5 & 1.0 & 2.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

286. What is the normal to a triangle defined by vertices $\begin{bmatrix}-3.0 & -4.0 & 4.0\end{bmatrix}$, $\begin{bmatrix}4.0 & -4.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}4.0 & 1.0 & -3.0\end{bmatrix}$ (listed in the order of positive rotation)?

287. What is the normal to a triangle defined by vertices $\begin{bmatrix}4.0 & 3.0 & 4.0\end{bmatrix}$, $\begin{bmatrix}3.0 & -4.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}-1.0 & 0.0 & 3.0\end{bmatrix}$ (listed in the order of positive rotation)?

288. Point p has a surface color of $\begin{bmatrix}1.0 & 3.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.11 & 0.59 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.7 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.2 & 0.81 & 0.55\end{bmatrix}$, and a view direction $\begin{bmatrix}0.84 & 0.44 & 0.32\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

289. Point p has a surface color of $\begin{bmatrix}1.3 & 1.0 & 1.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.54 & 0.61 & 0.58\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.21 & 0.59 & 0.78\end{bmatrix}$, a view direction $\begin{bmatrix}0.42 & 0.48 & 0.77\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

290. Point p has a surface color of $\begin{bmatrix}0.2 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.79 & 0.58 & 0.2\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 4.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.59 & 0.8 & 0.11\end{bmatrix}$, a view direction $\begin{bmatrix}0.81 & 0.2 & 0.55\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.8 & 0.8\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

291. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.77 & 0.37 & 0.52\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.5 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.37 & 0.88\end{bmatrix}$, a view direction $\begin{bmatrix}0.48 & 0.78 & 0.4\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.3 & 1.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

292. What is the normal to a triangle defined by vertices $\begin{bmatrix}-2.0 & 4.0 & -3.0\end{bmatrix}$, $\begin{bmatrix}-3.0 & -4.0 & -5.0\end{bmatrix}$, and $\begin{bmatrix}-5.0 & 2.0 & 2.0\end{bmatrix}$ (listed in the order of positive rotation)?

293. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.69 & 0.54 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 1.0 & 1.5\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.37 & 0.88\end{bmatrix}$, what will be the diffuse component of p's final color?

294. Point p has a surface color of $\begin{bmatrix}1.0 & 2.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.3 & 0.55\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.8 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.55 & 0.78\end{bmatrix}$, and a view direction $\begin{bmatrix}0.37 & 0.3 & 0.88\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

295. Point p has a surface color of $\begin{bmatrix}1.0 & 0.3 & 0.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.37 & 0.77 & 0.52\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.7 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.69 & 0.54\end{bmatrix}$, a view direction $\begin{bmatrix}0.52 & 0.78 & 0.35\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

296. Point p has a surface color of $\begin{bmatrix}0.5 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.5 & 0.21 & 0.84\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 2.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.6 & 0.01\end{bmatrix}$, what will be the diffuse component of p's final color?

297. What is the normal to a triangle defined by vertices $\begin{bmatrix}-2.0 & 1.0 & -1.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & 0.0 & -1.0\end{bmatrix}$, and $\begin{bmatrix}0.0 & 4.0 & 1.0\end{bmatrix}$ (listed in the order of positive rotation)?

298. Given a point location of $\begin{bmatrix}-4.0 & -2.0 & 4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}1.0 & 0.0 & 0.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

299. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.77 & 0.37 & 0.52\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.2 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.48 & 0.4\end{bmatrix}$, and a view direction $\begin{bmatrix}0.48 & 0.4 & 0.78\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

300. Point p has a surface color of $\begin{bmatrix}1.0 & 2.5 & 1.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.6 & 0.0 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.54 & 0.58 & 0.61\end{bmatrix}$, a view direction $\begin{bmatrix}0.2 & 0.58 & 0.79\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 1.5\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

301. Point p has a surface color of $\begin{bmatrix}1.7 & 1.3 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.54 & 0.69\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 2.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.6 & 0.01 & 0.8\end{bmatrix}$, and a view direction $\begin{bmatrix}0.01 & 0.8 & 0.6\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

302. What is the normal to a triangle defined by vertices $\begin{bmatrix}-5.0 & 3.0 & -4.0\end{bmatrix}$, $\begin{bmatrix}2.0 & 0.0 & -3.0\end{bmatrix}$, and $\begin{bmatrix}4.0 & -4.0 & 2.0\end{bmatrix}$ (listed in the order of positive rotation)?

303. Point p has a surface color of $\begin{bmatrix}2.5 & 1.0 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.55 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.5 & 1.5\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.4 & 0.48\end{bmatrix}$, what will be the diffuse component of p's final color?

304. Given a point location of $\begin{bmatrix}-4.0 & 3.0 & 3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-1.0 & -3.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

305. What is the normal to a triangle defined by vertices $\begin{bmatrix}-1.0 & -4.0 & -5.0\end{bmatrix}$, $\begin{bmatrix}-2.0 & -1.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}4.0 & 2.0 & -5.0\end{bmatrix}$ (listed in the order of positive rotation)?

306. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & 1.0 & 3.0\end{bmatrix}$, $\begin{bmatrix}-3.0 & 3.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}2.0 & -5.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

307. What is the normal to a triangle defined by vertices $\begin{bmatrix}-3.0 & 1.0 & 2.0\end{bmatrix}$, $\begin{bmatrix}-5.0 & 1.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}3.0 & 1.0 & 1.0\end{bmatrix}$ (listed in the order of positive rotation)?

308. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.01 & 0.6 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.2 & 1.0 & 0.8\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.4 & 0.48\end{bmatrix}$, and a view direction $\begin{bmatrix}0.35 & 0.52 & 0.78\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

309. What is the normal to a triangle defined by vertices $\begin{bmatrix}2.0 & 0.0 & -5.0\end{bmatrix}$, $\begin{bmatrix}3.0 & 0.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}-4.0 & 4.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

310. What is the normal to a triangle defined by vertices $\begin{bmatrix}2.0 & -4.0 & -4.0\end{bmatrix}$, $\begin{bmatrix}-2.0 & 1.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}-1.0 & -4.0 & -4.0\end{bmatrix}$ (listed in the order of positive rotation)?

311. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 3.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.4 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.5 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.21 & 0.78 & 0.59\end{bmatrix}$, and a view direction $\begin{bmatrix}0.42 & 0.77 & 0.48\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

312. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & 4.0 & -4.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & 1.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}-1.0 & 2.0 & -3.0\end{bmatrix}$ (listed in the order of positive rotation)?

313. Point p has a surface color of $\begin{bmatrix}0.0 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.55 & 0.78 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 2.5\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.4 & 0.48\end{bmatrix}$, and a view direction $\begin{bmatrix}0.58 & 0.49 & 0.65\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

314. Point p has a surface color of $\begin{bmatrix}0.5 & 1.0 & 0.8\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.01 & 0.8 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}3.0 & 3.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.78 & 0.55\end{bmatrix}$, a view direction $\begin{bmatrix}0.59 & 0.21 & 0.78\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.0 & 1.0 & 0.8\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

315. Point p has a surface color of $\begin{bmatrix}1.7 & 1.0 & 1.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.65 & 0.58 & 0.49\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.79 & 0.58 & 0.2\end{bmatrix}$, and a view direction $\begin{bmatrix}0.54 & 0.69 & 0.48\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

316. Point p has a surface color of $\begin{bmatrix}1.0 & 0.7 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.23 & 0.37 & 0.9\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.8 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.35 & 0.52\end{bmatrix}$, and a view direction $\begin{bmatrix}0.4 & 0.48 & 0.78\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

317. Point p has a surface color of $\begin{bmatrix}1.0 & 4.0 & 5.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.84 & 0.32 & 0.44\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.8 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.54 & 0.69 & 0.48\end{bmatrix}$, what will be the diffuse component of p's final color?

318. Point p has a surface color of $\begin{bmatrix}0.3 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.61 & 0.58 & 0.54\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.7 & 0.68 & 0.22\end{bmatrix}$, and a view direction $\begin{bmatrix}0.88 & 0.37 & 0.3\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

319. Point p has a surface color of $\begin{bmatrix}3.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.79 & 0.58 & 0.2\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.0 & 0.3\end{bmatrix}$ and direction $\begin{bmatrix}0.81 & 0.55 & 0.2\end{bmatrix}$, and a view direction $\begin{bmatrix}0.48 & 0.77 & 0.42\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

320. Point p has a surface color of $\begin{bmatrix}2.5 & 1.0 & 1.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.42 & 0.48 & 0.77\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 3.0\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.0 & 0.6\end{bmatrix}$, what will be the diffuse component of p's final color?

321. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & -5.0 & 2.0\end{bmatrix}$, $\begin{bmatrix}-3.0 & -4.0 & 2.0\end{bmatrix}$, and $\begin{bmatrix}-3.0 & -4.0 & 0.0\end{bmatrix}$ (listed in the order of positive rotation)?

322. What is the normal to a triangle defined by vertices $\begin{bmatrix}2.0 & 1.0 & -1.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & -5.0 & -5.0\end{bmatrix}$, and $\begin{bmatrix}-5.0 & -2.0 & 1.0\end{bmatrix}$ (listed in the order of positive rotation)?

323. Given a point location of $\begin{bmatrix}4.0 & 4.0 & 3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-3.0 & 2.0 & -3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

324. Point p has a surface color of $\begin{bmatrix}4.0 & 2.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.78 & 0.4\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.65 & 0.58 & 0.49\end{bmatrix}$, and a view direction $\begin{bmatrix}0.59 & 0.78 & 0.21\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

325. What is the normal to a triangle defined by vertices $\begin{bmatrix}-5.0 & 0.0 & -4.0\end{bmatrix}$, $\begin{bmatrix}-2.0 & 1.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}2.0 & -1.0 & 4.0\end{bmatrix}$ (listed in the order of positive rotation)?

326. Given a point location of $\begin{bmatrix}-4.0 & -4.0 & 0.0\end{bmatrix}$ and a light location of $\begin{bmatrix}0.0 & -3.0 & 1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

327. Given a point location of $\begin{bmatrix}2.0 & -3.0 & -5.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-2.0 & -5.0 & 4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

328. Given a point location of $\begin{bmatrix}0.0 & -5.0 & -5.0\end{bmatrix}$ and a light location of $\begin{bmatrix}0.0 & -2.0 & -1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

329. Point p has a surface color of $\begin{bmatrix}1.0 & 4.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.54 & 0.58 & 0.61\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.37 & 0.77 & 0.52\end{bmatrix}$, what will be the diffuse component of p's final color?

330. Given a point location of $\begin{bmatrix}1.0 & -5.0 & 2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-3.0 & -2.0 & 3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

331. Point p has a surface color of $\begin{bmatrix}3.0 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.68 & 0.42 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.2 & 1.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.79 & 0.2 & 0.58\end{bmatrix}$, what will be the diffuse component of p's final color?

332. Given a point location of $\begin{bmatrix}-4.0 & 4.0 & 0.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & 3.0 & 0.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

333. Point p has a surface color of $\begin{bmatrix}0.5 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.01 & 0.6 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.22 & 0.87 & 0.44\end{bmatrix}$, what will be the diffuse component of p's final color?

334. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.54 & 0.61 & 0.58\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.55 & 0.78\end{bmatrix}$, what will be the diffuse component of p's final color?

335. Point p has a surface color of $\begin{bmatrix}1.0 & 0.2 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.7 & 0.68 & 0.22\end{bmatrix}$. Given a light of color $\begin{bmatrix}3.0 & 1.0 & 4.0\end{bmatrix}$ and direction $\begin{bmatrix}0.52 & 0.77 & 0.37\end{bmatrix}$, a view direction $\begin{bmatrix}0.68 & 0.22 & 0.7\end{bmatrix}$, and an ambient color $\begin{bmatrix}2.0 & 3.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

336. Point p has a surface color of $\begin{bmatrix}5.0 & 4.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.35 & 0.52\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.4 & 0.78\end{bmatrix}$, what will be the diffuse component of p's final color?

337. Point p has a surface color of $\begin{bmatrix}0.8 & 1.0 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.54 & 0.61\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.42 & 0.48 & 0.77\end{bmatrix}$, a view direction $\begin{bmatrix}0.78 & 0.21 & 0.59\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.0 & 5.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

338. Given a point location of $\begin{bmatrix}-2.0 & 3.0 & 2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-2.0 & -3.0 & -2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

339. Point p has a surface color of $\begin{bmatrix}1.0 & 1.7 & 1.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.78 & 0.4\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.8 & 0.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.6 & 0.01 & 0.8\end{bmatrix}$, what will be the diffuse component of p's final color?

340. Given a point location of $\begin{bmatrix}4.0 & -3.0 & -2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}3.0 & 0.0 & 2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

341. What is the normal to a triangle defined by vertices $\begin{bmatrix}0.0 & 2.0 & -1.0\end{bmatrix}$, $\begin{bmatrix}4.0 & 3.0 & 2.0\end{bmatrix}$, and $\begin{bmatrix}0.0 & 0.0 & 4.0\end{bmatrix}$ (listed in the order of positive rotation)?

342. Given a point location of $\begin{bmatrix}-2.0 & -2.0 & -1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}3.0 & -2.0 & 0.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

343. Given a point location of $\begin{bmatrix}3.0 & 2.0 & -2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-1.0 & -4.0 & -3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

344. Point p has a surface color of $\begin{bmatrix}1.7 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.3 & 0.37 & 0.88\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.3 & 1.0 & 0.7\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.55 & 0.78\end{bmatrix}$, what will be the diffuse component of p's final color?

345. What is the normal to a triangle defined by vertices $\begin{bmatrix}-1.0 & -4.0 & 2.0\end{bmatrix}$, $\begin{bmatrix}3.0 & -3.0 & -3.0\end{bmatrix}$, and $\begin{bmatrix}-5.0 & -5.0 & 4.0\end{bmatrix}$ (listed in the order of positive rotation)?

346. Point p has a surface color of $\begin{bmatrix}1.5 & 1.0 & 2.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.22 & 0.44 & 0.87\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.8 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.84 & 0.32 & 0.44\end{bmatrix}$, and a view direction $\begin{bmatrix}0.44 & 0.32 & 0.84\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

347. Given a point location of $\begin{bmatrix}1.0 & -5.0 & -1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-5.0 & -5.0 & 4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

348. Given a point location of $\begin{bmatrix}0.0 & 3.0 & -5.0\end{bmatrix}$ and a light location of $\begin{bmatrix}1.0 & 2.0 & 1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

349. Point p has a surface color of $\begin{bmatrix}1.0 & 0.5 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.42 & 0.48 & 0.77\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.0 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.2 & 0.58 & 0.79\end{bmatrix}$, and a view direction $\begin{bmatrix}0.6 & 0.8 & 0.01\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

350. Given a point location of $\begin{bmatrix}4.0 & -3.0 & -1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}3.0 & 0.0 & -3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

351. Point p has a surface color of $\begin{bmatrix}5.0 & 5.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.49 & 0.65 & 0.58\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 1.0 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.55 & 0.3\end{bmatrix}$, and a view direction $\begin{bmatrix}0.11 & 0.8 & 0.59\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

352. Point p has a surface color of $\begin{bmatrix}1.0 & 1.7 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.55 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.7 & 1.0 & 0.3\end{bmatrix}$ and direction $\begin{bmatrix}0.4 & 0.78 & 0.48\end{bmatrix}$, what will be the diffuse component of p's final color?

353. Given a point location of $\begin{bmatrix}-2.0 & -1.0 & -1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-3.0 & 1.0 & -3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

354. Point p has a surface color of $\begin{bmatrix}0.2 & 0.2 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.11 & 0.59 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.3 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.6 & 0.8 & 0.01\end{bmatrix}$, and a view direction $\begin{bmatrix}0.79 & 0.58 & 0.2\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

355. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & 3.0 & 0.0\end{bmatrix}$, $\begin{bmatrix}2.0 & 2.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}-5.0 & 3.0 & 0.0\end{bmatrix}$ (listed in the order of positive rotation)?

356. Given a point location of $\begin{bmatrix}-5.0 & -1.0 & 4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-3.0 & -5.0 & -3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

357. Given a point location of $\begin{bmatrix}0.0 & -3.0 & -2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-5.0 & 1.0 & 0.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

358. Given a point location of $\begin{bmatrix}-5.0 & -1.0 & -4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}2.0 & -5.0 & 4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

359. Point p has a surface color of $\begin{bmatrix}0.5 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.2 & 0.58 & 0.79\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.55 & 0.2 & 0.81\end{bmatrix}$, and a view direction $\begin{bmatrix}0.3 & 0.88 & 0.37\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

360. Point p has a surface color of $\begin{bmatrix}5.0 & 1.0 & 3.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.84 & 0.21 & 0.5\end{bmatrix}$. Given a light of color $\begin{bmatrix}5.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.2 & 0.79 & 0.58\end{bmatrix}$, a view direction $\begin{bmatrix}0.22 & 0.68 & 0.7\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.5 & 1.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

361. Point p has a surface color of $\begin{bmatrix}1.0 & 0.8 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.2 & 0.55 & 0.81\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.52 & 0.77 & 0.37\end{bmatrix}$, and a view direction $\begin{bmatrix}0.68 & 0.7 & 0.22\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

362. Point p has a surface color of $\begin{bmatrix}4.0 & 1.0 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.59 & 0.78 & 0.21\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 4.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.77 & 0.42\end{bmatrix}$, what will be the diffuse component of p's final color?

363. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & 4.0 & -5.0\end{bmatrix}$, and $\begin{bmatrix}-1.0 & -1.0 & -3.0\end{bmatrix}$ (listed in the order of positive rotation)?

364. Point p has a surface color of $\begin{bmatrix}0.3 & 1.0 & 1.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.42 & 0.68 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.52 & 0.35 & 0.78\end{bmatrix}$, and a view direction $\begin{bmatrix}0.42 & 0.77 & 0.48\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

365. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.8\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.61 & 0.58 & 0.54\end{bmatrix}$. Given a light of color $\begin{bmatrix}4.0 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.2 & 0.55 & 0.81\end{bmatrix}$, what will be the diffuse component of p's final color?

366. Given a point location of $\begin{bmatrix}-3.0 & 0.0 & 4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}0.0 & 2.0 & 3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

367. What is the normal to a triangle defined by vertices $\begin{bmatrix}0.0 & 4.0 & 4.0\end{bmatrix}$, $\begin{bmatrix}0.0 & -5.0 & -4.0\end{bmatrix}$, and $\begin{bmatrix}2.0 & -1.0 & -3.0\end{bmatrix}$ (listed in the order of positive rotation)?

368. Point p has a surface color of $\begin{bmatrix}1.5 & 1.0 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.69 & 0.48 & 0.54\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 1.0 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.55 & 0.81 & 0.2\end{bmatrix}$, and a view direction $\begin{bmatrix}0.87 & 0.44 & 0.22\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

369. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 0.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.59 & 0.8 & 0.11\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.5 & 1.0 & 1.5\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.79 & 0.2\end{bmatrix}$, a view direction $\begin{bmatrix}0.44 & 0.32 & 0.84\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 5.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

370. Point p has a surface color of $\begin{bmatrix}0.7 & 1.0 & 0.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.01 & 0.6 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.5 & 0.21 & 0.84\end{bmatrix}$, what will be the diffuse component of p's final color?

371. Given a point location of $\begin{bmatrix}3.0 & 3.0 & 1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-2.0 & -1.0 & 2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

372. What is the normal to a triangle defined by vertices $\begin{bmatrix}-4.0 & -3.0 & 2.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & -5.0 & -3.0\end{bmatrix}$, and $\begin{bmatrix}-3.0 & -3.0 & -4.0\end{bmatrix}$ (listed in the order of positive rotation)?

373. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.6 & 0.42 & 0.68\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.3 & 1.0 & 0.7\end{bmatrix}$ and direction $\begin{bmatrix}0.7 & 0.68 & 0.22\end{bmatrix}$, and a view direction $\begin{bmatrix}0.7 & 0.68 & 0.22\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

374. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.3 & 0.55 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 5.0\end{bmatrix}$ and direction $\begin{bmatrix}0.21 & 0.84 & 0.5\end{bmatrix}$, what will be the diffuse component of p's final color?

375. Point p has a surface color of $\begin{bmatrix}0.5 & 1.0 & 0.8\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.87 & 0.22 & 0.44\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 1.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.22 & 0.87 & 0.44\end{bmatrix}$, what will be the diffuse component of p's final color?

376. What is the normal to a triangle defined by vertices $\begin{bmatrix}-2.0 & -2.0 & 1.0\end{bmatrix}$, $\begin{bmatrix}3.0 & 1.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}-2.0 & 1.0 & -1.0\end{bmatrix}$ (listed in the order of positive rotation)?

377. Given a point location of $\begin{bmatrix}-5.0 & 0.0 & 1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-5.0 & 3.0 & -3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

378. Point p has a surface color of $\begin{bmatrix}1.0 & 0.2 & 0.8\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.84 & 0.32 & 0.44\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.54 & 0.69 & 0.48\end{bmatrix}$, a view direction $\begin{bmatrix}0.8 & 0.11 & 0.59\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 4.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

379. Point p has a surface color of $\begin{bmatrix}1.5 & 1.0 & 2.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.44 & 0.84 & 0.32\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.52 & 0.35\end{bmatrix}$, a view direction $\begin{bmatrix}0.58 & 0.54 & 0.61\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.7 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

380. Given a point location of $\begin{bmatrix}1.0 & -1.0 & 3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-1.0 & 4.0 & -1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

381. Point p has a surface color of $\begin{bmatrix}1.0 & 2.5 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.4 & 0.78 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.32 & 0.44 & 0.84\end{bmatrix}$, what will be the diffuse component of p's final color?

382. What is the normal to a triangle defined by vertices $\begin{bmatrix}-2.0 & -1.0 & 0.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & -2.0 & -5.0\end{bmatrix}$, and $\begin{bmatrix}-4.0 & -5.0 & -5.0\end{bmatrix}$ (listed in the order of positive rotation)?

383. Given a point location of $\begin{bmatrix}2.0 & -5.0 & 3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}1.0 & -1.0 & -3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

384. Point p has a surface color of $\begin{bmatrix}0.3 & 1.0 & 0.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.88 & 0.3 & 0.37\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.2 & 0.8\end{bmatrix}$ and direction $\begin{bmatrix}0.84 & 0.5 & 0.21\end{bmatrix}$, and a view direction $\begin{bmatrix}0.48 & 0.4 & 0.78\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

385. Point p has a surface color of $\begin{bmatrix}0.8 & 1.0 & 0.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.65 & 0.49\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.0 & 4.0\end{bmatrix}$ and direction $\begin{bmatrix}0.0 & 0.8 & 0.6\end{bmatrix}$, a view direction $\begin{bmatrix}0.61 & 0.54 & 0.58\end{bmatrix}$, and an ambient color $\begin{bmatrix}4.0 & 1.0 & 3.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

386. Point p has a surface color of $\begin{bmatrix}0.5 & 2.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.54 & 0.69\end{bmatrix}$. Given a light of color $\begin{bmatrix}4.0 & 3.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.88 & 0.3 & 0.37\end{bmatrix}$, what will be the diffuse component of p's final color?

387. Point p has a surface color of $\begin{bmatrix}3.0 & 1.0 & 4.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.2 & 0.81 & 0.55\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.3 & 1.0 & 1.7\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.69 & 0.54\end{bmatrix}$, what will be the diffuse component of p's final color?

388. Point p has a surface color of $\begin{bmatrix}1.0 & 1.2 & 1.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.23 & 0.9 & 0.37\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.5 & 1.5\end{bmatrix}$ and direction $\begin{bmatrix}0.84 & 0.21 & 0.5\end{bmatrix}$, a view direction $\begin{bmatrix}0.58 & 0.54 & 0.61\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.7 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

389. What is the normal to a triangle defined by vertices $\begin{bmatrix}-1.0 & 2.0 & -4.0\end{bmatrix}$, $\begin{bmatrix}0.0 & -3.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}3.0 & -5.0 & 2.0\end{bmatrix}$ (listed in the order of positive rotation)?

390. What is the normal to a triangle defined by vertices $\begin{bmatrix}2.0 & -4.0 & -2.0\end{bmatrix}$, $\begin{bmatrix}3.0 & 2.0 & 1.0\end{bmatrix}$, and $\begin{bmatrix}0.0 & -1.0 & -5.0\end{bmatrix}$ (listed in the order of positive rotation)?

391. What is the normal to a triangle defined by vertices $\begin{bmatrix}0.0 & -2.0 & 1.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & -3.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}1.0 & 3.0 & -4.0\end{bmatrix}$ (listed in the order of positive rotation)?

392. What is the normal to a triangle defined by vertices $\begin{bmatrix}-4.0 & -5.0 & -2.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & 4.0 & 1.0\end{bmatrix}$, and $\begin{bmatrix}-2.0 & -3.0 & -3.0\end{bmatrix}$ (listed in the order of positive rotation)?

393. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.77 & 0.42\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 1.0 & 0.2\end{bmatrix}$ and direction $\begin{bmatrix}0.21 & 0.78 & 0.59\end{bmatrix}$, and a view direction $\begin{bmatrix}0.78 & 0.59 & 0.21\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

394. Point p has a surface color of $\begin{bmatrix}1.7 & 1.0 & 1.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.4 & 0.48 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.5 & 0.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$, what will be the diffuse component of p's final color?

395. Point p has a surface color of $\begin{bmatrix}1.0 & 0.5 & 0.8\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.52 & 0.37 & 0.77\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.3 & 1.7 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.3 & 0.55\end{bmatrix}$, a view direction $\begin{bmatrix}0.58 & 0.54 & 0.61\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.0 & 1.0 & 2.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

396. Point p has a surface color of $\begin{bmatrix}1.0 & 0.7 & 0.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.61 & 0.58 & 0.54\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.77 & 0.42\end{bmatrix}$, what will be the diffuse component of p's final color?

397. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.7 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.65 & 0.58 & 0.49\end{bmatrix}$, a view direction $\begin{bmatrix}0.58 & 0.54 & 0.61\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.8 & 0.5 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

398. Point p has a surface color of $\begin{bmatrix}1.0 & 0.5 & 0.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.7 & 0.68 & 0.22\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.7 & 1.0 & 0.7\end{bmatrix}$ and direction $\begin{bmatrix}0.49 & 0.58 & 0.65\end{bmatrix}$, what will be the diffuse component of p's final color?

399. What is the normal to a triangle defined by vertices $\begin{bmatrix}3.0 & 4.0 & 2.0\end{bmatrix}$, $\begin{bmatrix}0.0 & -2.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}-1.0 & -5.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

400. What is the normal to a triangle defined by vertices $\begin{bmatrix}-4.0 & 1.0 & 3.0\end{bmatrix}$, $\begin{bmatrix}1.0 & -5.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}1.0 & -2.0 & -5.0\end{bmatrix}$ (listed in the order of positive rotation)?

401. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 4.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.59 & 0.21\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.7 & 1.0 & 0.7\end{bmatrix}$ and direction $\begin{bmatrix}0.88 & 0.37 & 0.3\end{bmatrix}$, what will be the diffuse component of p's final color?

402. What is the normal to a triangle defined by vertices $\begin{bmatrix}2.0 & 1.0 & 3.0\end{bmatrix}$, $\begin{bmatrix}0.0 & 2.0 & -4.0\end{bmatrix}$, and $\begin{bmatrix}-1.0 & -4.0 & -1.0\end{bmatrix}$ (listed in the order of positive rotation)?

403. What is the normal to a triangle defined by vertices $\begin{bmatrix}0.0 & -2.0 & 1.0\end{bmatrix}$, $\begin{bmatrix}-3.0 & -2.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}1.0 & -5.0 & -3.0\end{bmatrix}$ (listed in the order of positive rotation)?

404. Point p has a surface color of $\begin{bmatrix}5.0 & 1.0 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.3 & 0.55 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.37 & 0.77 & 0.52\end{bmatrix}$, and a view direction $\begin{bmatrix}0.9 & 0.37 & 0.23\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

405. Point p has a surface color of $\begin{bmatrix}1.0 & 5.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.37 & 0.77 & 0.52\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.7 & 1.3 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.79 & 0.58 & 0.2\end{bmatrix}$, what will be the diffuse component of p's final color?

406. Point p has a surface color of $\begin{bmatrix}0.3 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.77 & 0.48 & 0.42\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 0.7 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.2 & 0.58 & 0.79\end{bmatrix}$, a view direction $\begin{bmatrix}0.84 & 0.32 & 0.44\end{bmatrix}$, and an ambient color $\begin{bmatrix}2.5 & 1.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

407. Point p has a surface color of $\begin{bmatrix}2.0 & 1.0 & 1.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.59 & 0.11 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 1.0 & 4.0\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.6 & 0.0\end{bmatrix}$, a view direction $\begin{bmatrix}0.7 & 0.22 & 0.68\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 0.2\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

408. What is the normal to a triangle defined by vertices $\begin{bmatrix}-1.0 & 4.0 & 4.0\end{bmatrix}$, $\begin{bmatrix}-3.0 & 3.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}0.0 & 1.0 & -3.0\end{bmatrix}$ (listed in the order of positive rotation)?

409. What is the normal to a triangle defined by vertices $\begin{bmatrix}3.0 & -4.0 & -4.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & -3.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}-5.0 & -1.0 & 2.0\end{bmatrix}$ (listed in the order of positive rotation)?

410. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.3 & 0.78 & 0.55\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.5\end{bmatrix}$ and direction $\begin{bmatrix}0.35 & 0.78 & 0.52\end{bmatrix}$, what will be the diffuse component of p's final color?

411. Given a point location of $\begin{bmatrix}0.0 & -3.0 & -2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-2.0 & 2.0 & 3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

412. Point p has a surface color of $\begin{bmatrix}2.0 & 2.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.5 & 0.84 & 0.21\end{bmatrix}$. Given a light of color $\begin{bmatrix}5.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.77 & 0.52 & 0.37\end{bmatrix}$, and a view direction $\begin{bmatrix}0.8 & 0.6 & 0.01\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

413. What is the normal to a triangle defined by vertices $\begin{bmatrix}-3.0 & -4.0 & -2.0\end{bmatrix}$, $\begin{bmatrix}-3.0 & -1.0 & 3.0\end{bmatrix}$, and $\begin{bmatrix}3.0 & 0.0 & 4.0\end{bmatrix}$ (listed in the order of positive rotation)?

414. Point p has a surface color of $\begin{bmatrix}2.5 & 1.0 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.55 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.3 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.21 & 0.5 & 0.84\end{bmatrix}$, and a view direction

$\begin{bmatrix}0.88 & 0.3 & 0.37\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

415. Given a point location of $\begin{bmatrix}4.0 & 2.0 & -4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}0.0 & 1.0 & 3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

416. Point p has a surface color of $\begin{bmatrix}0.7 & 0.7 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.84 & 0.32 & 0.44\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.3\end{bmatrix}$ and direction $\begin{bmatrix}0.9 & 0.23 & 0.37\end{bmatrix}$, and a view direction $\begin{bmatrix}0.79 & 0.58 & 0.2\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

417. Given a point location of $\begin{bmatrix}3.0 & -5.0 & -5.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-1.0 & 0.0 & -1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

418. Given a point location of $\begin{bmatrix}4.0 & -1.0 & 3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-3.0 & -2.0 & -3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

419. Point p has a surface color of $\begin{bmatrix}4.0 & 1.0 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.35 & 0.52 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}5.0 & 1.0 & 5.0\end{bmatrix}$ and direction $\begin{bmatrix}0.84 & 0.32 & 0.44\end{bmatrix}$, and a view direction $\begin{bmatrix}0.84 & 0.21 & 0.5\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

420. Given a point location of $\begin{bmatrix}2.0 & 4.0 & 2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}0.0 & -4.0 & -5.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

421. Point p has a surface color of $\begin{bmatrix}1.2 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.37 & 0.23 & 0.9\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.69 & 0.48 & 0.54\end{bmatrix}$, what will be the diffuse component of p's final color?

422. Point p has a surface color of $\begin{bmatrix}0.2 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.0 & 0.8 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.5 & 2.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.59 & 0.78 & 0.21\end{bmatrix}$, what will be the diffuse component of p's final color?

423. Point p has a surface color of $\begin{bmatrix}0.3 & 1.0 & 0.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.54 & 0.58 & 0.61\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.68 & 0.22 & 0.7\end{bmatrix}$, a view direction $\begin{bmatrix}0.84 & 0.44 & 0.32\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.8 & 1.0 & 0.8\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

424. What is the normal to a triangle defined by vertices $\begin{bmatrix}3.0 & -1.0 & 2.0\end{bmatrix}$, $\begin{bmatrix}3.0 & 0.0 & 2.0\end{bmatrix}$, and $\begin{bmatrix}-3.0 & 1.0 & -1.0\end{bmatrix}$ (listed in the order of positive rotation)?

425. What is the normal to a triangle defined by vertices $\begin{bmatrix}-1.0 & 4.0 & 1.0\end{bmatrix}$, $\begin{bmatrix}2.0 & -3.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}2.0 & -2.0 & -5.0\end{bmatrix}$ (listed in the order of positive rotation)?

426. Point p has a surface color of $\begin{bmatrix}4.0 & 2.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.4 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}5.0 & 1.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.49 & 0.65\end{bmatrix}$, a view direction $\begin{bmatrix}0.68 & 0.42 & 0.6\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 2.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

427. Point p has a surface color of $\begin{bmatrix}1.2 & 1.2 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.37 & 0.9 & 0.23\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 5.0\end{bmatrix}$ and direction $\begin{bmatrix}0.6 & 0.01 & 0.8\end{bmatrix}$, what will be the diffuse component of p's final color?

428. Given a point location of $\begin{bmatrix}4.0 & 4.0 & 2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-3.0 & -3.0 & 1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

429. Point p has a surface color of $\begin{bmatrix}1.0 & 3.0 & 4.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.01 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.7 & 0.7\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.55 & 0.78\end{bmatrix}$, and a view direction $\begin{bmatrix}0.4 & 0.78 & 0.48\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

430. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.44 & 0.84 & 0.32\end{bmatrix}$. Given a light of color $\begin{bmatrix}3.0 & 4.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$, a view direction $\begin{bmatrix}0.52 & 0.37 & 0.77\end{bmatrix}$, and an ambient color $\begin{bmatrix}5.0 & 0.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

431. Given a point location of $\begin{bmatrix}-4.0 & -1.0 & 3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-4.0 & 3.0 & 2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

432. What is the normal to a triangle defined by vertices $\begin{bmatrix}3.0 & 1.0 & 1.0\end{bmatrix}$, $\begin{bmatrix}2.0 & -4.0 & 2.0\end{bmatrix}$, and $\begin{bmatrix}1.0 & -4.0 & 2.0\end{bmatrix}$ (listed in the order of positive rotation)?

433. Point p has a surface color of $\begin{bmatrix}1.0 & 1.7 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.6 & 0.01\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 1.0 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.49 & 0.65\end{bmatrix}$, what will be the diffuse component of p's final color?

434. What is the normal to a triangle defined by vertices $\begin{bmatrix}4.0 & 3.0 & -3.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & -3.0 & -4.0\end{bmatrix}$, and $\begin{bmatrix}3.0 & -2.0 & -4.0\end{bmatrix}$ (listed in the order of positive rotation)?

435. Point p has a surface color of $\begin{bmatrix}1.0 & 1.5 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.55 & 0.78 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.68 & 0.6 & 0.42\end{bmatrix}$, and a view direction $\begin{bmatrix}0.48 & 0.78 & 0.4\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

436. Given a point location of $\begin{bmatrix}-5.0 & -4.0 & -4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-5.0 & 0.0 & -2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

437. Point p has a surface color of $\begin{bmatrix}1.7 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.5 & 1.0 & 2.5\end{bmatrix}$ and direction $\begin{bmatrix}0.6 & 0.68 & 0.42\end{bmatrix}$, what will be the diffuse component of p's final color?

438. Point p has a surface color of $\begin{bmatrix}1.0 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.59 & 0.11\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 5.0 & 3.0\end{bmatrix}$ and direction $\begin{bmatrix}0.88 & 0.3 & 0.37\end{bmatrix}$, a view direction $\begin{bmatrix}0.22 & 0.87 & 0.44\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.0 & 1.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

439. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & 2.0 & 2.0\end{bmatrix}$, $\begin{bmatrix}1.0 & 2.0 & 1.0\end{bmatrix}$, and $\begin{bmatrix}3.0 & 3.0 & 0.0\end{bmatrix}$ (listed in the order of positive rotation)?

440. Point p has a surface color of $\begin{bmatrix}0.5 & 2.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.2 & 0.81 & 0.55\end{bmatrix}$. Given a light of color $\begin{bmatrix}3.0 & 1.0 & 4.0\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.55 & 0.3\end{bmatrix}$, and a view direction $\begin{bmatrix}0.11 & 0.8 & 0.59\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

441. Point p has a surface color of $\begin{bmatrix}1.5 & 1.0 & 2.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.3 & 0.55\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.5 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.59 & 0.11 & 0.8\end{bmatrix}$, a view direction $\begin{bmatrix}0.54 & 0.48 & 0.69\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.0 & 4.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

442. Point p has a surface color of $\begin{bmatrix}2.5 & 1.0 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.69 & 0.54 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.5 & 1.5\end{bmatrix}$ and direction $\begin{bmatrix}0.55 & 0.2 & 0.81\end{bmatrix}$, what will be the diffuse component of p's final color?

443. Point p has a surface color of $\begin{bmatrix}1.5 & 1.0 & 2.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.2 & 0.55 & 0.81\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.3 & 0.3 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.77 & 0.42 & 0.48\end{bmatrix}$, and a view direction $\begin{bmatrix}0.2 & 0.58 & 0.79\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

444. What is the normal to a triangle defined by vertices $\begin{bmatrix}-3.0 & -1.0 & 1.0\end{bmatrix}$, $\begin{bmatrix}-5.0 & 3.0 & 1.0\end{bmatrix}$, and $\begin{bmatrix}-5.0 & 3.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

445. What is the normal to a triangle defined by vertices $\begin{bmatrix}0.0 & -1.0 & -3.0\end{bmatrix}$, $\begin{bmatrix}4.0 & -1.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}-2.0 & -1.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

446. Point p has a surface color of $\begin{bmatrix}0.7 & 0.3 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.6 & 0.01\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.81 & 0.55 & 0.2\end{bmatrix}$, and a view direction $\begin{bmatrix}0.48 & 0.42 & 0.77\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

447. Point p has a surface color of $\begin{bmatrix}1.0 & 1.3 & 1.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.35 & 0.78 & 0.52\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.7 & 1.7 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.22 & 0.7 & 0.68\end{bmatrix}$, and a view direction $\begin{bmatrix}0.52 & 0.35 & 0.78\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

448. Given a point location of $\begin{bmatrix}3.0 & 0.0 & -5.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-2.0 & -1.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

449. Point p has a surface color of $\begin{bmatrix}1.7 & 1.0 & 0.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.52 & 0.35 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.5 & 0.2\end{bmatrix}$ and direction $\begin{bmatrix}0.11 & 0.59 & 0.8\end{bmatrix}$, and a view direction $\begin{bmatrix}0.2 & 0.58 & 0.79\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

450. Point p has a surface color of $\begin{bmatrix}1.0 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.68 & 0.7 & 0.22\end{bmatrix}$. Given a light of color $\begin{bmatrix}4.0 & 1.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.52 & 0.35\end{bmatrix}$, a view direction $\begin{bmatrix}0.3 & 0.55 & 0.78\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 2.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

451. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & -5.0 & -4.0\end{bmatrix}$, $\begin{bmatrix}0.0 & 0.0 & -4.0\end{bmatrix}$, and $\begin{bmatrix}-1.0 & -2.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

452. What is the normal to a triangle defined by vertices $\begin{bmatrix}-2.0 & 0.0 & -1.0\end{bmatrix}$, $\begin{bmatrix}-3.0 & -4.0 & 3.0\end{bmatrix}$, and $\begin{bmatrix}2.0 & -2.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

453. Point p has a surface color of $\begin{bmatrix}0.5 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.42 & 0.48 & 0.77\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.6 & 0.8 & 0.0\end{bmatrix}$, and a view direction $\begin{bmatrix}0.8 & 0.6 & 0.01\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

454. Point p has a surface color of $\begin{bmatrix}1.0 & 4.0 & 3.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.37 & 0.88 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 1.0 & 3.0\end{bmatrix}$ and direction $\begin{bmatrix}0.54 & 0.48 & 0.69\end{bmatrix}$, what will be the diffuse component of p's final color?

455. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.79 & 0.2\end{bmatrix}$, a view direction $\begin{bmatrix}0.11 & 0.8 & 0.59\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.0 & 5.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

456. Point p has a surface color of $\begin{bmatrix}2.0 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.42 & 0.68 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 2.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.6 & 0.8 & 0.01\end{bmatrix}$, what will be the diffuse component of p's final color?

457. Point p has a surface color of $\begin{bmatrix}5.0 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.22 & 0.7 & 0.68\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.5 & 0.8\end{bmatrix}$ and direction $\begin{bmatrix}0.37 & 0.3 & 0.88\end{bmatrix}$, what will be the diffuse component of p's final color?

458. Point p has a surface color of $\begin{bmatrix}1.0 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.0 & 0.6 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.8\end{bmatrix}$ and direction $\begin{bmatrix}0.68 & 0.42 & 0.6\end{bmatrix}$, a view direction $\begin{bmatrix}0.48 & 0.78 & 0.4\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.5 & 2.5 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

459. Given a point location of $\begin{bmatrix}-1.0 & -2.0 & 4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-4.0 & 0.0 & -1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

460. Point p has a surface color of $\begin{bmatrix}0.0 & 1.2 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.77 & 0.42\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.3\end{bmatrix}$ and direction $\begin{bmatrix}0.79 & 0.2 & 0.58\end{bmatrix}$, what will be the diffuse component of p's final color?

461. Point p has a surface color of $\begin{bmatrix}0.0 & 3.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.42 & 0.77 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.37 & 0.3 & 0.88\end{bmatrix}$, what will be the diffuse component of p's final color?

462. Point p has a surface color of $\begin{bmatrix}2.0 & 1.0 & 5.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.49 & 0.58 & 0.65\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.7 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.54 & 0.69 & 0.48\end{bmatrix}$, a view direction $\begin{bmatrix}0.48 & 0.4 & 0.78\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.0 & 1.0 & 0.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

463. Given a point location of $\begin{bmatrix}-2.0 & -5.0 & 2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-1.0 & 4.0 & 2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

464. Point p has a surface color of $\begin{bmatrix}1.0 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.2 & 0.79\end{bmatrix}$. Given a light of color $\begin{bmatrix}4.0 & 5.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.52 & 0.35\end{bmatrix}$, a view direction $\begin{bmatrix}0.54 & 0.58 & 0.61\end{bmatrix}$, and an ambient color $\begin{bmatrix}5.0 & 1.0 & 0.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

465. Point p has a surface color of $\begin{bmatrix}1.5 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.81 & 0.55 & 0.2\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.54 & 0.61\end{bmatrix}$, and a view direction $\begin{bmatrix}0.54 & 0.58 & 0.61\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

466. Given a point location of $\begin{bmatrix}-4.0 & -5.0 & 2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-3.0 & -4.0 & 4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

467. Point p has a surface color of $\begin{bmatrix}0.5 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.2 & 0.58 & 0.79\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.5 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.5 & 0.21 & 0.84\end{bmatrix}$, a view direction $\begin{bmatrix}0.48 & 0.42 & 0.77\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.5 & 2.5\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

468. What is the normal to a triangle defined by vertices $\begin{bmatrix}-1.0 & -5.0 & -2.0\end{bmatrix}$, $\begin{bmatrix}2.0 & 2.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}-3.0 & 2.0 & 3.0\end{bmatrix}$ (listed in the order of positive rotation)?

469. Point p has a surface color of $\begin{bmatrix}2.5 & 1.0 & 1.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.2 & 0.79\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.59 & 0.11 & 0.8\end{bmatrix}$, what will be the diffuse component of p's final color?

470. Given a point location of $\begin{bmatrix}3.0 & 2.0 & 4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-4.0 & -3.0 & -3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

471. Given a point location of $\begin{bmatrix}-1.0 & -1.0 & -3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}0.0 & 4.0 & 1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

472. What is the normal to a triangle defined by vertices $\begin{bmatrix}-1.0 & 3.0 & 0.0\end{bmatrix}$, $\begin{bmatrix}-2.0 & -4.0 & -4.0\end{bmatrix}$, and $\begin{bmatrix}0.0 & -5.0 & 3.0\end{bmatrix}$ (listed in the order of positive rotation)?

473. Given a point location of $\begin{bmatrix}-1.0 & 0.0 & 1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-1.0 & -4.0 & -3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

474. Point p has a surface color of $\begin{bmatrix}0.2 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.87 & 0.44 & 0.22\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.5 & 2.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.2 & 0.81 & 0.55\end{bmatrix}$, a view direction $\begin{bmatrix}0.84 & 0.5 & 0.21\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.0 & 0.7 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

475. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.42 & 0.6 & 0.68\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 1.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.79 & 0.2 & 0.58\end{bmatrix}$, what will be the diffuse component of p's final color?

476. What is the normal to a triangle defined by vertices $\begin{bmatrix}-4.0 & 2.0 & -1.0\end{bmatrix}$, $\begin{bmatrix}0.0 & -2.0 & 1.0\end{bmatrix}$, and $\begin{bmatrix}-4.0 & 3.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

477. Given a point location of $\begin{bmatrix}0.0 & -4.0 & 0.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-5.0 & -5.0 & -5.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

478. Given a point location of $\begin{bmatrix}-5.0 & -2.0 & -5.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & -1.0 & 4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

479. Given a point location of $\begin{bmatrix}-2.0 & 4.0 & 3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-1.0 & -3.0 & 0.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

480. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.81 & 0.55 & 0.2\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 2.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.68 & 0.6 & 0.42\end{bmatrix}$, a view direction $\begin{bmatrix}0.37 & 0.77 & 0.52\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 5.0 & 2.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

481. Given a point location of $\begin{bmatrix}0.0 & 3.0 & -2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}3.0 & 3.0 & 3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

482. Point p has a surface color of $\begin{bmatrix}0.3 & 1.0 & 0.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.44 & 0.87 & 0.22\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 2.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.61 & 0.58 & 0.54\end{bmatrix}$, a view direction $\begin{bmatrix}0.21 & 0.59 & 0.78\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 3.0 & 2.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

483. Point p has a surface color of $\begin{bmatrix}1.0 & 3.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.9 & 0.37 & 0.23\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.2 & 0.79\end{bmatrix}$, and a view direction $\begin{bmatrix}0.9 & 0.23 & 0.37\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

484. Given a point location of $\begin{bmatrix}0.0 & 2.0 & 0.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-4.0 & -4.0 & 2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

485. Point p has a surface color of $\begin{bmatrix}1.0 & 3.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.49 & 0.65 & 0.58\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.23 & 0.37 & 0.9\end{bmatrix}$, what will be the diffuse component of p's final color?

486. What is the normal to a triangle defined by vertices $\begin{bmatrix}4.0 & -1.0 & 4.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & -3.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}0.0 & -4.0 & 3.0\end{bmatrix}$ (listed in the order of positive rotation)?

487. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.4 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.65 & 0.49\end{bmatrix}$, a view direction $\begin{bmatrix}0.59 & 0.21 & 0.78\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 3.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

488. Point p has a surface color of $\begin{bmatrix}0.0 & 2.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.77 & 0.42\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.54 & 0.48 & 0.69\end{bmatrix}$, what will be the diffuse component of p's final color?

489. What is the normal to a triangle defined by vertices $\begin{bmatrix}-1.0 & -2.0 & -2.0\end{bmatrix}$, $\begin{bmatrix}1.0 & -3.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}-4.0 & -1.0 & 0.0\end{bmatrix}$ (listed in the order of positive rotation)?

490. Given a point location of $\begin{bmatrix}-1.0 & -2.0 & -2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}3.0 & 3.0 & 4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

491. Point p has a surface color of $\begin{bmatrix}1.5 & 1.0 & 1.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.5 & 0.84 & 0.21\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.7 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.0 & 0.6\end{bmatrix}$, a view direction $\begin{bmatrix}0.61 & 0.54 & 0.58\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.3 & 0.3\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

492. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.55 & 0.2 & 0.81\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 3.0\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.55 & 0.78\end{bmatrix}$, and a view direction $\begin{bmatrix}0.77 & 0.42 & 0.48\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

493. Point p has a surface color of $\begin{bmatrix}0.8 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.88 & 0.3 & 0.37\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 3.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.11 & 0.59 & 0.8\end{bmatrix}$, and a view direction $\begin{bmatrix}0.55 & 0.78 & 0.3\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

494. What is the normal to a triangle defined by vertices $\begin{bmatrix}4.0 & 0.0 & -3.0\end{bmatrix}$, $\begin{bmatrix}-5.0 & 2.0 & 1.0\end{bmatrix}$, and $\begin{bmatrix}0.0 & -2.0 & -4.0\end{bmatrix}$ (listed in the order of positive rotation)?

495. Point p has a surface color of $\begin{bmatrix}1.0 & 5.0 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.23 & 0.9 & 0.37\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 5.0 & 4.0\end{bmatrix}$ and direction $\begin{bmatrix}0.54 & 0.69 & 0.48\end{bmatrix}$, a view direction $\begin{bmatrix}0.52 & 0.78 & 0.35\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.5 & 0.8\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

496. Point p has a surface color of $\begin{bmatrix}0.3 & 0.3 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.35 & 0.78 & 0.52\end{bmatrix}$. Given a light of color $\begin{bmatrix}4.0 & 2.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.81 & 0.2 & 0.55\end{bmatrix}$, and a view direction $\begin{bmatrix}0.48 & 0.54 & 0.69\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

497. Point p has a surface color of $\begin{bmatrix}1.2 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.52 & 0.78 & 0.35\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.2 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.7 & 0.22 & 0.68\end{bmatrix}$, what will be the diffuse component of p's final color?

498. Point p has a surface color of $\begin{bmatrix}1.0 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.6 & 0.8 & 0.01\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 0.7 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.52 & 0.35\end{bmatrix}$, what will be the diffuse component of p's final color?

499. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & 2.0 & 1.0\end{bmatrix}$, $\begin{bmatrix}-3.0 & 3.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}4.0 & 3.0 & -1.0\end{bmatrix}$ (listed in the order of positive rotation)?

500. Point p has a surface color of $\begin{bmatrix}4.0 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.6 & 0.0 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.3 & 1.0 & 0.3\end{bmatrix}$ and direction $\begin{bmatrix}0.42 & 0.68 & 0.6\end{bmatrix}$, a view direction $\begin{bmatrix}0.77 & 0.42 & 0.48\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.5 & 0.5 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

501. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.55 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.3\end{bmatrix}$ and direction $\begin{bmatrix}0.37 & 0.9 & 0.23\end{bmatrix}$, a view direction $\begin{bmatrix}0.78 & 0.48 & 0.4\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 4.0 & 5.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

502. What is the normal to a triangle defined by vertices $\begin{bmatrix}2.0 & -1.0 & 1.0\end{bmatrix}$, $\begin{bmatrix}2.0 & 3.0 & 2.0\end{bmatrix}$, and $\begin{bmatrix}-2.0 & -4.0 & 0.0\end{bmatrix}$ (listed in the order of positive rotation)?

503. Point p has a surface color of $\begin{bmatrix}1.0 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.6 & 0.01\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.9 & 0.23 & 0.37\end{bmatrix}$, a view direction $\begin{bmatrix}0.77 & 0.52 & 0.37\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.0 & 1.0 & 0.5\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

504. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 4.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.77 & 0.42 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 0.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.49 & 0.58 & 0.65\end{bmatrix}$, a view direction $\begin{bmatrix}0.23 & 0.9 & 0.37\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 1.3\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

505. Point p has a surface color of $\begin{bmatrix}1.0 & 2.5 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.23 & 0.9 & 0.37\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.3 & 1.0 & 1.7\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.59 & 0.11\end{bmatrix}$, a view direction $\begin{bmatrix}0.79 & 0.2 & 0.58\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.7 & 0.7\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

506. Point p has a surface color of $\begin{bmatrix}1.0 & 2.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.32 & 0.84 & 0.44\end{bmatrix}$. Given a light of color $\begin{bmatrix}5.0 & 1.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.49 & 0.65 & 0.58\end{bmatrix}$, what will be the diffuse component of p's final color?

507. What is the normal to a triangle defined by vertices $\begin{bmatrix}2.0 & 2.0 & 0.0\end{bmatrix}$, $\begin{bmatrix}2.0 & 0.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}-2.0 & 4.0 & 2.0\end{bmatrix}$ (listed in the order of positive rotation)?

508. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.8\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.69 & 0.54\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.23 & 0.9 & 0.37\end{bmatrix}$, and a view direction $\begin{bmatrix}0.6 & 0.68 & 0.42\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

509. What is the normal to a triangle defined by vertices $\begin{bmatrix}4.0 & 4.0 & -4.0\end{bmatrix}$, $\begin{bmatrix}2.0 & -1.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}-5.0 & -1.0 & 3.0\end{bmatrix}$ (listed in the order of positive rotation)?

510. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 1.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.7 & 0.68 & 0.22\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.7 & 1.3 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.37 & 0.77 & 0.52\end{bmatrix}$, a view direction $\begin{bmatrix}0.48 & 0.78 & 0.4\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.2 & 0.5\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

511. Point p has a surface color of $\begin{bmatrix}2.0 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.7 & 0.22 & 0.68\end{bmatrix}$. Given a light of color $\begin{bmatrix}4.0 & 1.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.44 & 0.32 & 0.84\end{bmatrix}$, a view direction $\begin{bmatrix}0.6 & 0.8 & 0.0\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.3 & 0.7 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

512. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 1.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.61 & 0.54\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.68 & 0.42 & 0.6\end{bmatrix}$, what will be the diffuse component of p's final color?

513. Point p has a surface color of $\begin{bmatrix}4.0 & 5.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.81 & 0.2 & 0.55\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 2.5\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.52 & 0.35\end{bmatrix}$, a view direction $\begin{bmatrix}0.78 & 0.4 & 0.48\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.0 & 1.0 & 1.5\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

514. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.61 & 0.54\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$, what will be the diffuse component of p's final color?

515. Given a point location of $\begin{bmatrix}-3.0 & 4.0 & 0.0\end{bmatrix}$ and a light location of $\begin{bmatrix}0.0 & 3.0 & -3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

516. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 3.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.61 & 0.58 & 0.54\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 3.0\end{bmatrix}$ and direction $\begin{bmatrix}0.54 & 0.61 & 0.58\end{bmatrix}$, what will be the diffuse component of p's final color?

517. Point p has a surface color of $\begin{bmatrix}3.0 & 3.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.37 & 0.23 & 0.9\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 1.0 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.59 & 0.78 & 0.21\end{bmatrix}$, what will be the diffuse component of p's final color?

518. Point p has a surface color of $\begin{bmatrix}0.7 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.42 & 0.48 & 0.77\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.7 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.54 & 0.69\end{bmatrix}$, and a view direction $\begin{bmatrix}0.54 & 0.69 & 0.48\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

519. What is the normal to a triangle defined by vertices $\begin{bmatrix}0.0 & 3.0 & 4.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & -5.0 & -5.0\end{bmatrix}$, and $\begin{bmatrix}0.0 & -1.0 & -4.0\end{bmatrix}$ (listed in the order of positive rotation)?

520. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 1.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.35 & 0.78 & 0.52\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 0.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.79 & 0.2\end{bmatrix}$, a view direction $\begin{bmatrix}0.44 & 0.22 & 0.87\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.3 & 1.0 & 0.3\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

521. Point p has a surface color of $\begin{bmatrix}1.0 & 0.3 & 0.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.87 & 0.44 & 0.22\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.3 & 1.0 & 1.3\end{bmatrix}$ and direction $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$, a view direction $\begin{bmatrix}0.37 & 0.9 & 0.23\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 5.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

522. Point p has a surface color of $\begin{bmatrix}0.5 & 0.2 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.81 & 0.55 & 0.2\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.7 & 1.3\end{bmatrix}$ and direction $\begin{bmatrix}0.2 & 0.55 & 0.81\end{bmatrix}$, a view direction $\begin{bmatrix}0.44 & 0.22 & 0.87\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.2 & 0.8\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

523. What is the normal to a triangle defined by vertices $\begin{bmatrix}-4.0 & 3.0 & 1.0\end{bmatrix}$, $\begin{bmatrix}1.0 & 2.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}-1.0 & -3.0 & 3.0\end{bmatrix}$ (listed in the order of positive rotation)?

524. Given a point location of $\begin{bmatrix}-1.0 & 0.0 & -1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-3.0 & -4.0 & 4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

525. Point p has a surface color of $\begin{bmatrix}1.0 & 0.7 & 0.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.78 & 0.4\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.3 & 0.7\end{bmatrix}$ and direction $\begin{bmatrix}0.81 & 0.55 & 0.2\end{bmatrix}$, a view direction $\begin{bmatrix}0.55 & 0.81 & 0.2\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

526. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.3 & 0.78 & 0.55\end{bmatrix}$. Given a light of color $\begin{bmatrix}4.0 & 1.0 & 5.0\end{bmatrix}$ and direction $\begin{bmatrix}0.44 & 0.87 & 0.22\end{bmatrix}$, and a view direction $\begin{bmatrix}0.77 & 0.42 & 0.48\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

527. Point p has a surface color of $\begin{bmatrix}1.0 & 4.0 & 4.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.11 & 0.59\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 0.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.4 & 0.48 & 0.78\end{bmatrix}$, what will be the diffuse component of p's final color?

528. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.84 & 0.21 & 0.5\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.3 & 1.3\end{bmatrix}$ and direction $\begin{bmatrix}0.54 & 0.69 & 0.48\end{bmatrix}$, what will be the diffuse component of p's final color?

529. Point p has a surface color of $\begin{bmatrix}0.0 & 0.3 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.4 & 0.48 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.3 & 0.3\end{bmatrix}$ and direction $\begin{bmatrix}0.84 & 0.32 & 0.44\end{bmatrix}$, what will be the diffuse component of p's final color?

530. Point p has a surface color of $\begin{bmatrix}1.5 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.52 & 0.78 & 0.35\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.3 & 0.7 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.84 & 0.21 & 0.5\end{bmatrix}$, and a view direction $\begin{bmatrix}0.5 & 0.84 & 0.21\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

531. Given a point location of $\begin{bmatrix}-3.0 & 0.0 & 3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}0.0 & 3.0 & -5.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

532. Given a point location of $\begin{bmatrix}-4.0 & -3.0 & -4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & 1.0 & -3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

533. Point p has a surface color of $\begin{bmatrix}2.0 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.59 & 0.78 & 0.21\end{bmatrix}$. Given a light of color $\begin{bmatrix}3.0 & 2.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.49 & 0.58 & 0.65\end{bmatrix}$, and a view direction $\begin{bmatrix}0.0 & 0.6 & 0.8\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

534. Point p has a surface color of $\begin{bmatrix}2.0 & 2.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.88 & 0.37 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.49 & 0.65 & 0.58\end{bmatrix}$, what will be the diffuse component of p's final color?

535. What is the normal to a triangle defined by vertices $\begin{bmatrix}3.0 & -5.0 & 0.0\end{bmatrix}$, $\begin{bmatrix}1.0 & -1.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}-3.0 & 1.0 & 4.0\end{bmatrix}$ (listed in the order of positive rotation)?

536. Point p has a surface color of $\begin{bmatrix}1.0 & 2.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.9 & 0.37 & 0.23\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.0 & 5.0\end{bmatrix}$ and direction $\begin{bmatrix}0.61 & 0.58 & 0.54\end{bmatrix}$, a view direction $\begin{bmatrix}0.2 & 0.81 & 0.55\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

537. What is the normal to a triangle defined by vertices $\begin{bmatrix}-1.0 & 3.0 & 2.0\end{bmatrix}$, $\begin{bmatrix}-3.0 & 3.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}-2.0 & -5.0 & 0.0\end{bmatrix}$ (listed in the order of positive rotation)?

538. Point p has a surface color of $\begin{bmatrix}3.0 & 3.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.77 & 0.42\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 0.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.6 & 0.01 & 0.8\end{bmatrix}$, what will be the diffuse component of p's final color?

539. What is the normal to a triangle defined by vertices $\begin{bmatrix}-3.0 & -4.0 & -5.0\end{bmatrix}$, $\begin{bmatrix}-3.0 & -5.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}-5.0 & 1.0 & 3.0\end{bmatrix}$ (listed in the order of positive rotation)?

540. Point p has a surface color of $\begin{bmatrix}0.5 & 0.8 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.4 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 2.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.2 & 0.81 & 0.55\end{bmatrix}$, and a view direction $\begin{bmatrix}0.8 & 0.59 & 0.11\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

541. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.8\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.52 & 0.78 & 0.35\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.7\end{bmatrix}$ and direction $\begin{bmatrix}0.22 & 0.44 & 0.87\end{bmatrix}$, a view direction $\begin{bmatrix}0.22 & 0.44 & 0.87\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.2 & 1.0 & 0.8\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

542. Given a point location of $\begin{bmatrix}0.0 & -2.0 & -1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-4.0 & -3.0 & -5.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

543. Point p has a surface color of $\begin{bmatrix}1.2 & 0.8 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.44 & 0.87 & 0.22\end{bmatrix}$. Given a light of color $\begin{bmatrix}5.0 & 4.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.59 & 0.21 & 0.78\end{bmatrix}$, a view direction $\begin{bmatrix}0.55 & 0.2 & 0.81\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.2 & 1.0 & 0.2\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

544. Point p has a surface color of $\begin{bmatrix}0.0 & 3.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.55 & 0.78 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}3.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.59 & 0.8 & 0.11\end{bmatrix}$, a view direction $\begin{bmatrix}0.7 & 0.22 & 0.68\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.8 & 1.0 & 0.5\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

545. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.6 & 0.0 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}3.0 & 5.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.11 & 0.59\end{bmatrix}$, what will be the diffuse component of p's final color?

546. Point p has a surface color of $\begin{bmatrix}1.0 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.6 & 0.8 & 0.0\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.3 & 1.7 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.9 & 0.37 & 0.23\end{bmatrix}$, what will be the diffuse component of p's final color?

547. Point p has a surface color of $\begin{bmatrix}1.0 & 2.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.01 & 0.6 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.7 & 1.0 & 0.3\end{bmatrix}$ and direction $\begin{bmatrix}0.87 & 0.44 & 0.22\end{bmatrix}$, a view direction $\begin{bmatrix}0.4 & 0.78 & 0.48\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.3 & 1.0 & 0.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

548. Point p has a surface color of $\begin{bmatrix}0.2 & 0.8 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.87 & 0.44 & 0.22\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.32 & 0.84 & 0.44\end{bmatrix}$, what will be the diffuse component of p's final color?

549. Point p has a surface color of $\begin{bmatrix}2.0 & 2.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.21 & 0.5 & 0.84\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.7 & 0.3\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.21 & 0.59\end{bmatrix}$, what will be the diffuse component of p's final color?

550. What is the normal to a triangle defined by vertices $\begin{bmatrix}0.0 & -1.0 & 0.0\end{bmatrix}$, $\begin{bmatrix}1.0 & 2.0 & -1.0\end{bmatrix}$, and $\begin{bmatrix}-5.0 & 3.0 & 3.0\end{bmatrix}$ (listed in the order of positive rotation)?

551. Point p has a surface color of $\begin{bmatrix}0.2 & 0.2 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.2 & 0.58 & 0.79\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.6 & 0.8 & 0.01\end{bmatrix}$, and a view direction $\begin{bmatrix}0.78 & 0.59 & 0.21\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

552. What is the normal to a triangle defined by vertices $\begin{bmatrix}-4.0 & -3.0 & -2.0\end{bmatrix}$, $\begin{bmatrix}2.0 & 0.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}4.0 & 4.0 & -4.0\end{bmatrix}$ (listed in the order of positive rotation)?

553. Point p has a surface color of $\begin{bmatrix}2.0 & 1.0 & 5.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.6 & 0.01\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.3 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.77 & 0.37 & 0.52\end{bmatrix}$, what will be the diffuse component of p's final color?

554. Given a point location of $\begin{bmatrix}-3.0 & 2.0 & 2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & -5.0 & -2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

555. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.42 & 0.77 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.2\end{bmatrix}$ and direction $\begin{bmatrix}0.77 & 0.52 & 0.37\end{bmatrix}$, a view direction $\begin{bmatrix}0.54 & 0.61 & 0.58\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.5 & 0.5 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

556. Point p has a surface color of $\begin{bmatrix}0.7 & 1.3 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.5 & 0.21 & 0.84\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 1.0 & 2.5\end{bmatrix}$ and direction $\begin{bmatrix}0.0 & 0.6 & 0.8\end{bmatrix}$, and a view direction $\begin{bmatrix}0.87 & 0.22 & 0.44\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

557. What is the normal to a triangle defined by vertices $\begin{bmatrix}2.0 & 0.0 & 3.0\end{bmatrix}$, $\begin{bmatrix}1.0 & 3.0 & 3.0\end{bmatrix}$, and $\begin{bmatrix}-5.0 & -1.0 & 4.0\end{bmatrix}$ (listed in the order of positive rotation)?

558. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & 3.0 & -2.0\end{bmatrix}$, $\begin{bmatrix}-2.0 & -5.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}4.0 & -3.0 & 3.0\end{bmatrix}$ (listed in the order of positive rotation)?

559. Point p has a surface color of $\begin{bmatrix}1.0 & 2.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.54 & 0.58 & 0.61\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.77 & 0.42 & 0.48\end{bmatrix}$, and a view direction $\begin{bmatrix}0.58 & 0.79 & 0.2\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

560. What is the normal to a triangle defined by vertices $\begin{bmatrix}-1.0 & -3.0 & -5.0\end{bmatrix}$, $\begin{bmatrix}-5.0 & 3.0 & -5.0\end{bmatrix}$, and $\begin{bmatrix}-3.0 & 1.0 & -5.0\end{bmatrix}$ (listed in the order of positive rotation)?

561. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 0.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.21 & 0.84 & 0.5\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.3 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.79 & 0.2\end{bmatrix}$, what will be the diffuse component of p's final color?

562. Given a point location of $\begin{bmatrix}-5.0 & -5.0 & 3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}3.0 & -1.0 & 1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

563. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.59 & 0.8 & 0.11\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.3\end{bmatrix}$ and direction $\begin{bmatrix}0.21 & 0.59 & 0.78\end{bmatrix}$, and a view direction $\begin{bmatrix}0.37 & 0.88 & 0.3\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

564. Point p has a surface color of $\begin{bmatrix}1.5 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.52 & 0.35 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 1.0 & 0.8\end{bmatrix}$ and direction $\begin{bmatrix}0.7 & 0.68 & 0.22\end{bmatrix}$, and a view direction $\begin{bmatrix}0.37 & 0.77 & 0.52\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

565. Given a point location of $\begin{bmatrix}4.0 & -4.0 & -4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-4.0 & -3.0 & 1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

566. Point p has a surface color of $\begin{bmatrix}0.5 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.52 & 0.37 & 0.77\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 2.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.78 & 0.4\end{bmatrix}$, a view direction $\begin{bmatrix}0.58 & 0.79 & 0.2\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.7 & 0.7\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

567. Point p has a surface color of $\begin{bmatrix}0.2 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.35 & 0.78 & 0.52\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 5.0 & 5.0\end{bmatrix}$ and direction $\begin{bmatrix}0.9 & 0.37 & 0.23\end{bmatrix}$, and a view direction $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

568. What is the normal to a triangle defined by vertices $\begin{bmatrix}2.0 & 0.0 & 3.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & -5.0 & -1.0\end{bmatrix}$, and $\begin{bmatrix}-5.0 & 0.0 & -3.0\end{bmatrix}$ (listed in the order of positive rotation)?

569. Point p has a surface color of $\begin{bmatrix}0.3 & 1.7 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.77 & 0.42\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.9 & 0.37 & 0.23\end{bmatrix}$, and a view direction $\begin{bmatrix}0.9 & 0.23 & 0.37\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

570. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & 3.0 & -1.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & -1.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}-3.0 & 1.0 & -5.0\end{bmatrix}$ (listed in the order of positive rotation)?

571. Point p has a surface color of $\begin{bmatrix}4.0 & 4.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.01 & 0.8 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 2.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.22 & 0.7 & 0.68\end{bmatrix}$, a view direction $\begin{bmatrix}0.37 & 0.77 & 0.52\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.8 & 1.0 & 1.2\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

572. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.5 & 0.84 & 0.21\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.2\end{bmatrix}$ and direction $\begin{bmatrix}0.22 & 0.68 & 0.7\end{bmatrix}$, a view direction $\begin{bmatrix}0.21 & 0.59 & 0.78\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

573. Point p has a surface color of $\begin{bmatrix}1.0 & 1.5 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.59 & 0.21\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 0.8 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.84 & 0.21 & 0.5\end{bmatrix}$, what will be the diffuse component of p's final color?

574. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.3 & 0.78 & 0.55\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.5 & 2.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.84 & 0.5 & 0.21\end{bmatrix}$, what will be the diffuse component of p's final color?

575. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.59 & 0.21\end{bmatrix}$. Given a light of color $\begin{bmatrix}5.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.54 & 0.61\end{bmatrix}$, what will be the diffuse component of p's final color?

576. Given a point location of $\begin{bmatrix}3.0 & 2.0 & 3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & -1.0 & -5.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

577. Point p has a surface color of $\begin{bmatrix}2.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.6 & 0.01 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.2 & 0.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.11 & 0.59 & 0.8\end{bmatrix}$, and a view direction $\begin{bmatrix}0.8 & 0.01 & 0.6\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

578. What is the normal to a triangle defined by vertices $\begin{bmatrix}2.0 & -4.0 & -1.0\end{bmatrix}$, $\begin{bmatrix}-5.0 & -2.0 & 2.0\end{bmatrix}$, and $\begin{bmatrix}-1.0 & -3.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

579. Point p has a surface color of $\begin{bmatrix}3.0 & 5.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.11 & 0.8 & 0.59\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.78 & 0.55\end{bmatrix}$, a view direction $\begin{bmatrix}0.54 & 0.48 & 0.69\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.8 & 1.0 & 0.2\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

580. Point p has a surface color of $\begin{bmatrix}1.0 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.61 & 0.54\end{bmatrix}$. Given a light of color $\begin{bmatrix}5.0 & 1.0 & 4.0\end{bmatrix}$ and direction $\begin{bmatrix}0.4 & 0.78 & 0.48\end{bmatrix}$, what will be the diffuse component of p's final color?

581. Point p has a surface color of $\begin{bmatrix}1.3 & 1.0 & 1.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.68 & 0.42 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 0.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.68 & 0.6 & 0.42\end{bmatrix}$, a view direction $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.0 & 2.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

582. Point p has a surface color of $\begin{bmatrix}1.2 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.9 & 0.37 & 0.23\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.2 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.11 & 0.59\end{bmatrix}$, a view direction $\begin{bmatrix}0.79 & 0.2 & 0.58\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.2 & 1.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

583. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 1.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.37 & 0.23 & 0.9\end{bmatrix}$. Given a light of color $\begin{bmatrix}3.0 & 5.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.4 & 0.78\end{bmatrix}$, a view direction $\begin{bmatrix}0.49 & 0.58 & 0.65\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.5 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

584. Point p has a surface color of $\begin{bmatrix}3.0 & 3.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.68 & 0.22 & 0.7\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 2.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.54 & 0.61 & 0.58\end{bmatrix}$, a view direction $\begin{bmatrix}0.78 & 0.3 & 0.55\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.8 & 0.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

585. Given a point location of $\begin{bmatrix}1.0 & 4.0 & -2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & -4.0 & -2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

586. Point p has a surface color of $\begin{bmatrix}1.3 & 1.3 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.68 & 0.6 & 0.42\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 4.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.2 & 0.58 & 0.79\end{bmatrix}$, a view direction $\begin{bmatrix}0.0 & 0.8 & 0.6\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 4.0 & 3.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

587. Point p has a surface color of $\begin{bmatrix}0.7 & 1.7 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.3 & 0.78 & 0.55\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.3 & 0.3 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.9 & 0.37 & 0.23\end{bmatrix}$, a view direction $\begin{bmatrix}0.01 & 0.6 & 0.8\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.5 & 2.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

588. Given a point location of $\begin{bmatrix}-3.0 & -3.0 & 3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-1.0 & 1.0 & -3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

589. Given a point location of $\begin{bmatrix}3.0 & 4.0 & 1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-3.0 & -3.0 & 3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

590. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.9 & 0.37 & 0.23\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.59 & 0.11 & 0.8\end{bmatrix}$, and a view direction $\begin{bmatrix}0.3 & 0.55 & 0.78\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

591. What is the normal to a triangle defined by vertices $\begin{bmatrix}0.0 & 4.0 & -1.0\end{bmatrix}$, $\begin{bmatrix}3.0 & -2.0 & -3.0\end{bmatrix}$, and $\begin{bmatrix}4.0 & 3.0 & -4.0\end{bmatrix}$ (listed in the order of positive rotation)?

592. Point p has a surface color of $\begin{bmatrix}1.0 & 0.2 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.88 & 0.37 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 2.0 & 5.0\end{bmatrix}$ and direction $\begin{bmatrix}0.11 & 0.59 & 0.8\end{bmatrix}$, a view direction $\begin{bmatrix}0.37 & 0.88 & 0.3\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 5.0 & 0.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

593. Point p has a surface color of $\begin{bmatrix}0.5 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.52 & 0.35 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.88 & 0.37 & 0.3\end{bmatrix}$, a view direction $\begin{bmatrix}0.42 & 0.6 & 0.68\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 2.0 & 2.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

594. What is the normal to a triangle defined by vertices $\begin{bmatrix}-1.0 & 0.0 & -2.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & -2.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}4.0 & 2.0 & 2.0\end{bmatrix}$ (listed in the order of positive rotation)?

595. Point p has a surface color of $\begin{bmatrix}1.0 & 0.2 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.42 & 0.77 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.55 & 0.3\end{bmatrix}$, what will be the diffuse component of p's final color?

596. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 0.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.5 & 0.21 & 0.84\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.01 & 0.8 & 0.6\end{bmatrix}$, a view direction $\begin{bmatrix}0.87 & 0.44 & 0.22\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.5 & 0.2 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

597. Point p has a surface color of $\begin{bmatrix}0.2 & 0.8 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.44 & 0.84 & 0.32\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 1.0 & 0.7\end{bmatrix}$ and direction $\begin{bmatrix}0.4 & 0.48 & 0.78\end{bmatrix}$, what will be the diffuse component of p's final color?

598. Given a point location of $\begin{bmatrix}4.0 & 2.0 & 2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-1.0 & 0.0 & 4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

599. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & -2.0 & -2.0\end{bmatrix}$, $\begin{bmatrix}4.0 & -5.0 & 3.0\end{bmatrix}$, and $\begin{bmatrix}-2.0 & -1.0 & 0.0\end{bmatrix}$ (listed in the order of positive rotation)?

600. Point p has a surface color of $\begin{bmatrix}0.3 & 1.0 & 0.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.61 & 0.54\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.5 & 2.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.59 & 0.21\end{bmatrix}$, what will be the diffuse component of p's final color?

601. Point p has a surface color of $\begin{bmatrix}2.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.2 & 0.55 & 0.81\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.7 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.77 & 0.42 & 0.48\end{bmatrix}$, what will be the diffuse component of p's final color?

602. What is the normal to a triangle defined by vertices $\begin{bmatrix}-2.0 & -4.0 & -2.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & 2.0 & 1.0\end{bmatrix}$, and $\begin{bmatrix}-3.0 & -5.0 & -5.0\end{bmatrix}$ (listed in the order of positive rotation)?

603. Given a point location of $\begin{bmatrix}-3.0 & 4.0 & -3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-2.0 & -1.0 & -2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

604. Given a point location of $\begin{bmatrix}-2.0 & -3.0 & 3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & -5.0 & 0.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

605. Given a point location of $\begin{bmatrix}-2.0 & -4.0 & -3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-3.0 & 3.0 & -5.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

606. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 5.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.9 & 0.23 & 0.37\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.7 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.21 & 0.59 & 0.78\end{bmatrix}$, a view direction $\begin{bmatrix}0.37 & 0.88 & 0.3\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 0.2\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

607. What is the normal to a triangle defined by vertices $\begin{bmatrix}2.0 & 2.0 & -3.0\end{bmatrix}$, $\begin{bmatrix}-2.0 & -4.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}-4.0 & 2.0 & 4.0\end{bmatrix}$ (listed in the order of positive rotation)?

608. Given a point location of $\begin{bmatrix}-5.0 & 4.0 & -3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}2.0 & -2.0 & -1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

609. Given a point location of $\begin{bmatrix}0.0 & -3.0 & 2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-4.0 & -1.0 & -3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

610. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.54 & 0.69\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.5 & 1.0 & 2.5\end{bmatrix}$ and direction $\begin{bmatrix}0.49 & 0.65 & 0.58\end{bmatrix}$, a view direction $\begin{bmatrix}0.68 & 0.7 & 0.22\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.5 & 0.5\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

611. Point p has a surface color of $\begin{bmatrix}2.0 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.84 & 0.32 & 0.44\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.5 & 0.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.87 & 0.44 & 0.22\end{bmatrix}$, a view direction $\begin{bmatrix}0.21 & 0.59 & 0.78\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.2 & 0.5\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

612. What is the normal to a triangle defined by vertices $\begin{bmatrix}4.0 & 2.0 & -4.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & -5.0 & -3.0\end{bmatrix}$, and $\begin{bmatrix}-2.0 & 4.0 & 3.0\end{bmatrix}$ (listed in the order of positive rotation)?

613. Point p has a surface color of $\begin{bmatrix}3.0 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.11 & 0.59 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 1.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.49 & 0.58 & 0.65\end{bmatrix}$, a view direction $\begin{bmatrix}0.68 & 0.22 & 0.7\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.5 & 1.0 & 2.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

614. Point p has a surface color of $\begin{bmatrix}1.0 & 0.2 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.49 & 0.58 & 0.65\end{bmatrix}$. Given a light of color $\begin{bmatrix}4.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.35 & 0.52 & 0.78\end{bmatrix}$, what will be the diffuse component of p's final color?

615. Point p has a surface color of $\begin{bmatrix}1.0 & 5.0 & 4.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.2 & 0.55 & 0.81\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 4.0 & 5.0\end{bmatrix}$ and direction $\begin{bmatrix}0.55 & 0.78 & 0.3\end{bmatrix}$, and a view direction $\begin{bmatrix}0.6 & 0.68 & 0.42\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

616. Given a point location of $\begin{bmatrix}0.0 & -4.0 & 0.0\end{bmatrix}$ and a light location of $\begin{bmatrix}1.0 & -2.0 & 1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

617. Point p has a surface color of $\begin{bmatrix}1.0 & 0.7 & 0.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.21 & 0.5 & 0.84\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.6 & 0.8 & 0.01\end{bmatrix}$, what will be the diffuse component of p's final color?

618. What is the normal to a triangle defined by vertices $\begin{bmatrix}0.0 & 1.0 & -2.0\end{bmatrix}$, $\begin{bmatrix}3.0 & -5.0 & -4.0\end{bmatrix}$, and $\begin{bmatrix}-3.0 & -1.0 & 0.0\end{bmatrix}$ (listed in the order of positive rotation)?

619. What is the normal to a triangle defined by vertices $\begin{bmatrix}-1.0 & 1.0 & 1.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & 4.0 & 3.0\end{bmatrix}$, and $\begin{bmatrix}3.0 & -2.0 & 4.0\end{bmatrix}$ (listed in the order of positive rotation)?

620. Point p has a surface color of $\begin{bmatrix}0.3 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.77 & 0.42\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.7\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.2 & 0.79\end{bmatrix}$, and a view direction $\begin{bmatrix}0.3 & 0.55 & 0.78\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

621. Point p has a surface color of $\begin{bmatrix}1.0 & 1.5 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.52 & 0.37 & 0.77\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.2 & 1.2\end{bmatrix}$ and direction $\begin{bmatrix}0.79 & 0.58 & 0.2\end{bmatrix}$, what will be the diffuse component of p's final color?

622. What is the normal to a triangle defined by vertices $\begin{bmatrix}2.0 & -4.0 & -5.0\end{bmatrix}$, $\begin{bmatrix}-5.0 & -4.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}0.0 & -1.0 & -1.0\end{bmatrix}$ (listed in the order of positive rotation)?

623. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.4 & 0.78 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.3 & 1.3\end{bmatrix}$ and direction $\begin{bmatrix}0.49 & 0.65 & 0.58\end{bmatrix}$, and a view direction $\begin{bmatrix}0.32 & 0.44 & 0.84\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

624. Given a point location of $\begin{bmatrix}3.0 & 0.0 & -3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-2.0 & -5.0 & -1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

625. Given a point location of $\begin{bmatrix}-3.0 & -2.0 & 1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}1.0 & 3.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

626. What is the normal to a triangle defined by vertices $\begin{bmatrix}0.0 & -2.0 & -1.0\end{bmatrix}$, $\begin{bmatrix}0.0 & -4.0 & 1.0\end{bmatrix}$, and $\begin{bmatrix}3.0 & -1.0 & 4.0\end{bmatrix}$ (listed in the order of positive rotation)?

627. Given a point location of $\begin{bmatrix}-5.0 & 3.0 & 1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & -3.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

628. Point p has a surface color of $\begin{bmatrix}0.5 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.84 & 0.21 & 0.5\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.61 & 0.54 & 0.58\end{bmatrix}$, what will be the diffuse component of p's final color?

629. Point p has a surface color of $\begin{bmatrix}1.0 & 5.0 & 5.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.68 & 0.7 & 0.22\end{bmatrix}$. Given a light of color $\begin{bmatrix}4.0 & 3.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.59 & 0.8 & 0.11\end{bmatrix}$, what will be the diffuse component of p's final color?

630. Point p has a surface color of $\begin{bmatrix}2.0 & 1.0 & 2.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.79 & 0.2\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.7 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.77 & 0.42\end{bmatrix}$, a view direction $\begin{bmatrix}0.61 & 0.54 & 0.58\end{bmatrix}$, and an ambient color $\begin{bmatrix}3.0 & 1.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

631. Given a point location of $\begin{bmatrix}3.0 & -3.0 & -3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}1.0 & -1.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

632. Point p has a surface color of $\begin{bmatrix}1.0 & 1.2 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.37 & 0.3 & 0.88\end{bmatrix}$. Given a light of color $\begin{bmatrix}5.0 & 1.0 & 3.0\end{bmatrix}$ and direction $\begin{bmatrix}0.2 & 0.79 & 0.58\end{bmatrix}$, what will be the diffuse component of p's final color?

633. Point p has a surface color of $\begin{bmatrix}1.0 & 5.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.32 & 0.44 & 0.84\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.7 & 1.7\end{bmatrix}$ and direction $\begin{bmatrix}0.79 & 0.58 & 0.2\end{bmatrix}$, and a view direction $\begin{bmatrix}0.6 & 0.0 & 0.8\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

634. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.11 & 0.59\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.7 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.22 & 0.87 & 0.44\end{bmatrix}$, and a view direction $\begin{bmatrix}0.9 & 0.23 & 0.37\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

635. What is the normal to a triangle defined by vertices $\begin{bmatrix}3.0 & -1.0 & -3.0\end{bmatrix}$, $\begin{bmatrix}2.0 & -1.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}-2.0 & 1.0 & 0.0\end{bmatrix}$ (listed in the order of positive rotation)?

636. What is the normal to a triangle defined by vertices $\begin{bmatrix}0.0 & 3.0 & 1.0\end{bmatrix}$, $\begin{bmatrix}2.0 & 3.0 & -4.0\end{bmatrix}$, and $\begin{bmatrix}2.0 & -2.0 & -1.0\end{bmatrix}$ (listed in the order of positive rotation)?

637. Point p has a surface color of $\begin{bmatrix}1.0 & 0.7 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.3 & 0.78 & 0.55\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.52 & 0.78 & 0.35\end{bmatrix}$, a view direction $\begin{bmatrix}0.77 & 0.42 & 0.48\end{bmatrix}$, and an ambient color $\begin{bmatrix}5.0 & 1.0 & 4.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

638. Given a point location of $\begin{bmatrix}1.0 & -2.0 & -5.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & 2.0 & 4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

639. Point p has a surface color of $\begin{bmatrix}1.7 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.11 & 0.59 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.3 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.48 & 0.4\end{bmatrix}$, a view direction $\begin{bmatrix}0.78 & 0.35 & 0.52\end{bmatrix}$,

and an ambient color $\begin{bmatrix}1.0 & 0.7 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

640. Point p has a surface color of $\begin{bmatrix}0.2 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.55 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.22 & 0.87 & 0.44\end{bmatrix}$, and a view direction $\begin{bmatrix}0.59 & 0.21 & 0.78\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

641. What is the normal to a triangle defined by vertices $\begin{bmatrix}0.0 & 0.0 & 3.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & -4.0 & -4.0\end{bmatrix}$, and $\begin{bmatrix}-2.0 & 4.0 & 2.0\end{bmatrix}$ (listed in the order of positive rotation)?

642. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.69 & 0.54\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.2 & 1.0 & 0.8\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.11 & 0.59\end{bmatrix}$, what will be the diffuse component of p's final color?

643. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.8\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.2 & 0.81 & 0.55\end{bmatrix}$. Given a light of color $\begin{bmatrix}3.0 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.84 & 0.21 & 0.5\end{bmatrix}$, a view direction $\begin{bmatrix}0.58 & 0.2 & 0.79\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.0 & 0.5 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

644. Point p has a surface color of $\begin{bmatrix}1.7 & 0.3 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.88 & 0.37 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.7 & 1.0 & 0.3\end{bmatrix}$ and direction $\begin{bmatrix}0.77 & 0.52 & 0.37\end{bmatrix}$, what will be the diffuse component of p's final color?

645. Point p has a surface color of $\begin{bmatrix}1.0 & 0.8 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.65 & 0.49\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.7 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.37 & 0.88 & 0.3\end{bmatrix}$, what will be the diffuse component of p's final color?

646. What is the normal to a triangle defined by vertices $\begin{bmatrix}-3.0 & -1.0 & 3.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & 3.0 & -4.0\end{bmatrix}$, and $\begin{bmatrix}4.0 & 2.0 & 0.0\end{bmatrix}$ (listed in the order of positive rotation)?

647. Point p has a surface color of $\begin{bmatrix}1.0 & 0.2 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.01 & 0.8 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 2.0 & 1.5\end{bmatrix}$ and direction $\begin{bmatrix}0.49 & 0.65 & 0.58\end{bmatrix}$, a view direction $\begin{bmatrix}0.59 & 0.78 & 0.21\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 4.0 & 3.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

648. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.59 & 0.21\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.3 & 0.7 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.52 & 0.35\end{bmatrix}$, and a view direction $\begin{bmatrix}0.42 & 0.48 & 0.77\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

649. Given a point location of $\begin{bmatrix}-1.0 & -3.0 & 0.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-5.0 & 1.0 & -3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

650. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.79 & 0.58 & 0.2\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 1.0 & 0.3\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.78 & 0.4\end{bmatrix}$, and a view direction $\begin{bmatrix}0.3 & 0.55 & 0.78\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

651. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.52 & 0.35\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.5 & 1.0 & 2.5\end{bmatrix}$ and direction $\begin{bmatrix}0.44 & 0.87 & 0.22\end{bmatrix}$, a view direction $\begin{bmatrix}0.3 & 0.37 & 0.88\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.5 & 0.2\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

652. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 4.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.65 & 0.49 & 0.58\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 2.5 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.81 & 0.2 & 0.55\end{bmatrix}$, a view direction $\begin{bmatrix}0.68 & 0.6 & 0.42\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.5 & 1.0 & 2.5\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

653. Point p has a surface color of $\begin{bmatrix}1.0 & 0.3 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.0 & 0.8 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.3 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$, what will be the diffuse component of p's final color?

654. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.77 & 0.42 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.7 & 1.0 & 0.7\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.3 & 0.55\end{bmatrix}$, and a view direction $\begin{bmatrix}0.78 & 0.21 & 0.59\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

655. Point p has a surface color of $\begin{bmatrix}0.5 & 1.0 & 1.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.54 & 0.61 & 0.58\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.7 & 1.0 & 0.3\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.52 & 0.35\end{bmatrix}$, a view direction $\begin{bmatrix}0.78 & 0.3 & 0.55\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.7 & 0.3 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

656. Point p has a surface color of $\begin{bmatrix}2.0 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.69 & 0.54 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.4 & 0.48 & 0.78\end{bmatrix}$, a view direction $\begin{bmatrix}0.69 & 0.54 & 0.48\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 1.5\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

657. Point p has a surface color of $\begin{bmatrix}1.0 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.23 & 0.37 & 0.9\end{bmatrix}$. Given a light of color $\begin{bmatrix}4.0 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.79 & 0.58 & 0.2\end{bmatrix}$, what will be the diffuse component of p's final color?

658. Given a point location of $\begin{bmatrix}0.0 & -3.0 & -2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-5.0 & 0.0 & -3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

659. Point p has a surface color of $\begin{bmatrix}1.0 & 4.0 & 4.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.37 & 0.3 & 0.88\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.7 & 1.0 & 1.7\end{bmatrix}$ and direction $\begin{bmatrix}0.6 & 0.0 & 0.8\end{bmatrix}$, and a view direction $\begin{bmatrix}0.78 & 0.3 & 0.55\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

660. What is the normal to a triangle defined by vertices $\begin{bmatrix}-5.0 & -2.0 & 4.0\end{bmatrix}$, $\begin{bmatrix}-2.0 & 4.0 & 1.0\end{bmatrix}$, and $\begin{bmatrix}0.0 & -5.0 & -3.0\end{bmatrix}$ (listed in the order of positive rotation)?

661. What is the normal to a triangle defined by vertices $\begin{bmatrix}-5.0 & -3.0 & 2.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & 3.0 & -1.0\end{bmatrix}$, and $\begin{bmatrix}-3.0 & 0.0 & -5.0\end{bmatrix}$ (listed in the order of positive rotation)?

662. Point p has a surface color of $\begin{bmatrix}0.5 & 1.2 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.69 & 0.54 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.5 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.11 & 0.59 & 0.8\end{bmatrix}$, what will be the diffuse component of p's final color?

663. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & -2.0 & -1.0\end{bmatrix}$, $\begin{bmatrix}1.0 & -1.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}-1.0 & -3.0 & 2.0\end{bmatrix}$ (listed in the order of positive rotation)?

664. Given a point location of $\begin{bmatrix}4.0 & -3.0 & 4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}2.0 & 0.0 & -1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

665. Given a point location of $\begin{bmatrix}-4.0 & 3.0 & 2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-3.0 & 1.0 & -3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

666. Given a point location of $\begin{bmatrix}-5.0 & -1.0 & -4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-2.0 & 4.0 & -5.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

667. What is the normal to a triangle defined by vertices $\begin{bmatrix}-5.0 & 1.0 & -3.0\end{bmatrix}$, $\begin{bmatrix}-5.0 & -4.0 & -3.0\end{bmatrix}$, and $\begin{bmatrix}-2.0 & 3.0 & 0.0\end{bmatrix}$ (listed in the order of positive rotation)?

668. Point p has a surface color of $\begin{bmatrix}1.0 & 5.0 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.55 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 3.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.37 & 0.9 & 0.23\end{bmatrix}$, what will be the diffuse component of p's final color?

669. Point p has a surface color of $\begin{bmatrix}1.0 & 1.7 & 0.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.69 & 0.54 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.59 & 0.11\end{bmatrix}$, what will be the diffuse component of p's final color?

670. Point p has a surface color of $\begin{bmatrix}1.0 & 0.5 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.42 & 0.6 & 0.68\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.3 & 1.0 & 0.7\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.6 & 0.01\end{bmatrix}$, what will be the diffuse component of p's final color?

671. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.01 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 1.0 & 1.3\end{bmatrix}$ and direction $\begin{bmatrix}0.52 & 0.77 & 0.37\end{bmatrix}$, a view direction $\begin{bmatrix}0.68 & 0.22 & 0.7\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 0.3\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

672. Point p has a surface color of $\begin{bmatrix}0.0 & 3.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.11 & 0.59\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.78 & 0.55\end{bmatrix}$, a view direction $\begin{bmatrix}0.2 & 0.58 & 0.79\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 4.0 & 5.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

673. What is the normal to a triangle defined by vertices $\begin{bmatrix}-3.0 & 3.0 & -2.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & 1.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}-4.0 & -4.0 & 2.0\end{bmatrix}$ (listed in the order of positive rotation)?

674. Given a point location of $\begin{bmatrix}-5.0 & 3.0 & -4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}1.0 & -1.0 & -5.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

675. Point p has a surface color of $\begin{bmatrix}1.0 & 0.8 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.11 & 0.59 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.42 & 0.77\end{bmatrix}$, what will be the diffuse component of p's final color?

676. Point p has a surface color of $\begin{bmatrix}0.3 & 1.0 & 0.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.88 & 0.3 & 0.37\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.5 & 0.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.84 & 0.5 & 0.21\end{bmatrix}$, what will be the diffuse component of p's final color?

677. What is the normal to a triangle defined by vertices $\begin{bmatrix}4.0 & -1.0 & 3.0\end{bmatrix}$, $\begin{bmatrix}-3.0 & -3.0 & -1.0\end{bmatrix}$, and $\begin{bmatrix}2.0 & -3.0 & 0.0\end{bmatrix}$ (listed in the order of positive rotation)?

678. Point p has a surface color of $\begin{bmatrix}1.0 & 0.5 & 0.8\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.7 & 0.68 & 0.22\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.49 & 0.65\end{bmatrix}$, a view direction $\begin{bmatrix}0.54 & 0.58 & 0.61\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.3 & 1.0 & 1.7\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

679. Given a point location of $\begin{bmatrix}2.0 & -4.0 & -3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-5.0 & 2.0 & 1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

680. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.55 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.7 & 1.7 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.77 & 0.37 & 0.52\end{bmatrix}$, a view direction $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$, and an ambient color $\begin{bmatrix}2.5 & 1.0 & 1.5\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

681. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & -4.0 & 3.0\end{bmatrix}$, $\begin{bmatrix}0.0 & 4.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}-2.0 & -2.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

682. Given a point location of $\begin{bmatrix}-4.0 & -3.0 & -4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-2.0 & -5.0 & 0.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

683. Point p has a surface color of $\begin{bmatrix}0.5 & 2.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.0 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.2\end{bmatrix}$ and direction $\begin{bmatrix}0.4 & 0.78 & 0.48\end{bmatrix}$, what will be the diffuse component of p's final color?

684. What is the normal to a triangle defined by vertices $\begin{bmatrix}-5.0 & -2.0 & -5.0\end{bmatrix}$, $\begin{bmatrix}1.0 & -2.0 & 3.0\end{bmatrix}$, and $\begin{bmatrix}-5.0 & -2.0 & 2.0\end{bmatrix}$ (listed in the order of positive rotation)?

685. Given a point location of $\begin{bmatrix}1.0 & -3.0 & 2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}1.0 & 3.0 & 0.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

686. Point p has a surface color of $\begin{bmatrix}1.0 & 0.2 & 0.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.42 & 0.6 & 0.68\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.7 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.6 & 0.8 & 0.01\end{bmatrix}$, a view direction $\begin{bmatrix}0.2 & 0.55 & 0.81\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.5 & 0.5 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

687. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.2 & 0.79 & 0.58\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.4 & 0.78 & 0.48\end{bmatrix}$, what will be the diffuse component of p's final color?

688. Point p has a surface color of $\begin{bmatrix}5.0 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.5 & 0.21 & 0.84\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.2\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.55 & 0.3\end{bmatrix}$, a view direction $\begin{bmatrix}0.78 & 0.55 & 0.3\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.0 & 5.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

689. What is the normal to a triangle defined by vertices $\begin{bmatrix}-4.0 & 4.0 & 4.0\end{bmatrix}$, $\begin{bmatrix}0.0 & 2.0 & 3.0\end{bmatrix}$, and $\begin{bmatrix}-3.0 & -1.0 & -1.0\end{bmatrix}$ (listed in the order of positive rotation)?

690. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.0 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 3.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.78 & 0.55\end{bmatrix}$, what will be the diffuse component of p's final color?

691. What is the normal to a triangle defined by vertices $\begin{bmatrix}3.0 & 2.0 & 3.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & 0.0 & 3.0\end{bmatrix}$, and $\begin{bmatrix}-4.0 & 4.0 & 1.0\end{bmatrix}$ (listed in the order of positive rotation)?

692. Point p has a surface color of $\begin{bmatrix}0.5 & 1.0 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.68 & 0.42 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 2.5\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.55 & 0.78\end{bmatrix}$, a view direction $\begin{bmatrix}0.3 & 0.78 & 0.55\end{bmatrix}$, and an ambient color $\begin{bmatrix}4.0 & 0.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

693. Given a point location of $\begin{bmatrix}-5.0 & -5.0 & -2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-5.0 & -3.0 & -3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

694. Point p has a surface color of $\begin{bmatrix}1.0 & 1.3 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.52 & 0.78 & 0.35\end{bmatrix}$. Given a light of color $\begin{bmatrix}5.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.69 & 0.54 & 0.48\end{bmatrix}$, what will be the diffuse component of p's final color?

695. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 4.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.54 & 0.61 & 0.58\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 1.0 & 1.3\end{bmatrix}$ and direction $\begin{bmatrix}0.2 & 0.55 & 0.81\end{bmatrix}$, a view direction $\begin{bmatrix}0.42 & 0.77 & 0.48\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.5 & 0.2 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

696. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.68 & 0.42 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.7 & 1.0 & 1.7\end{bmatrix}$ and direction $\begin{bmatrix}0.9 & 0.37 & 0.23\end{bmatrix}$, a view direction $\begin{bmatrix}0.69 & 0.54 & 0.48\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 0.2\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

697. Given a point location of $\begin{bmatrix}-1.0 & 1.0 & 4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & 0.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

698. Point p has a surface color of $\begin{bmatrix}0.3 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.22 & 0.68 & 0.7\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.7 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.61 & 0.54\end{bmatrix}$, and a view direction $\begin{bmatrix}0.11 & 0.59 & 0.8\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

699. Point p has a surface color of $\begin{bmatrix}1.2 & 1.0 & 0.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.44 & 0.87 & 0.22\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.21 & 0.59\end{bmatrix}$, a view direction $\begin{bmatrix}0.32 & 0.84 & 0.44\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.5 & 2.5 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

700. Point p has a surface color of $\begin{bmatrix}3.0 & 4.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.42 & 0.77 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.3\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.55 & 0.78\end{bmatrix}$, and a view direction $\begin{bmatrix}0.78 & 0.48 & 0.4\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

701. What is the normal to a triangle defined by vertices $\begin{bmatrix}-2.0 & 3.0 & -5.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & 0.0 & -1.0\end{bmatrix}$, and $\begin{bmatrix}-4.0 & 0.0 & 1.0\end{bmatrix}$ (listed in the order of positive rotation)?

702. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & -4.0 & -2.0\end{bmatrix}$, $\begin{bmatrix}-3.0 & 0.0 & -1.0\end{bmatrix}$, and $\begin{bmatrix}1.0 & 2.0 & -3.0\end{bmatrix}$ (listed in the order of positive rotation)?

703. Given a point location of $\begin{bmatrix}-5.0 & -3.0 & -3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-5.0 & -3.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

704. Point p has a surface color of $\begin{bmatrix}0.5 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.21 & 0.5 & 0.84\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 2.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.52 & 0.77 & 0.37\end{bmatrix}$, a view direction $\begin{bmatrix}0.84 & 0.5 & 0.21\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.0 & 1.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

705. Point p has a surface color of $\begin{bmatrix}1.0 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.37 & 0.88 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 5.0 & 3.0\end{bmatrix}$ and direction $\begin{bmatrix}0.6 & 0.68 & 0.42\end{bmatrix}$, what will be the diffuse component of p's final color?

706. Given a point location of $\begin{bmatrix}-4.0 & -5.0 & 2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}1.0 & 0.0 & 3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

707. What is the normal to a triangle defined by vertices $\begin{bmatrix}-2.0 & 3.0 & 1.0\end{bmatrix}$, $\begin{bmatrix}4.0 & -2.0 & -4.0\end{bmatrix}$, and $\begin{bmatrix}-5.0 & -2.0 & -3.0\end{bmatrix}$ (listed in the order of positive rotation)?

708. Point p has a surface color of $\begin{bmatrix}2.5 & 1.0 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.37 & 0.3 & 0.88\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.4 & 0.78 & 0.48\end{bmatrix}$, and a view direction $\begin{bmatrix}0.78 & 0.55 & 0.3\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

709. Point p has a surface color of $\begin{bmatrix}3.0 & 1.0 & 3.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.84 & 0.5 & 0.21\end{bmatrix}$. Given a light of color $\begin{bmatrix}4.0 & 2.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.7 & 0.68 & 0.22\end{bmatrix}$, and a view direction $\begin{bmatrix}0.55 & 0.78 & 0.3\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

710. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 0.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.52 & 0.77 & 0.37\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.61 & 0.58 & 0.54\end{bmatrix}$, and a view direction $\begin{bmatrix}0.2 & 0.58 & 0.79\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

711. Given a point location of $\begin{bmatrix}-5.0 & -5.0 & -5.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-4.0 & -1.0 & 2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

712. Given a point location of $\begin{bmatrix}4.0 & 3.0 & 2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & 2.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

713. Point p has a surface color of $\begin{bmatrix}0.0 & 4.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.32 & 0.84 & 0.44\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.7 & 0.3 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.54 & 0.61\end{bmatrix}$, what will be the diffuse component of p's final color?

714. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.8\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.7 & 0.3\end{bmatrix}$ and direction $\begin{bmatrix}0.6 & 0.0 & 0.8\end{bmatrix}$, what will be the diffuse component of p's final color?

715. Given a point location of $\begin{bmatrix}-3.0 & 0.0 & -4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & 4.0 & 2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

716. Point p has a surface color of $\begin{bmatrix}1.0 & 0.2 & 0.8\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.59 & 0.8 & 0.11\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 5.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.55 & 0.78\end{bmatrix}$, what will be the diffuse component of p's final color?

717. Point p has a surface color of $\begin{bmatrix}1.0 & 1.2 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.3 & 0.37 & 0.88\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.8 & 1.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.0 & 0.6\end{bmatrix}$, what will be the diffuse component of p's final color?

718. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 0.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.42 & 0.48 & 0.77\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 5.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.81 & 0.55 & 0.2\end{bmatrix}$, and a view direction $\begin{bmatrix}0.35 & 0.52 & 0.78\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

719. Given a point location of $\begin{bmatrix}2.0 & 0.0 & -3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}2.0 & -2.0 & 4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

720. What is the normal to a triangle defined by vertices $\begin{bmatrix}2.0 & -2.0 & 0.0\end{bmatrix}$, $\begin{bmatrix}-2.0 & 2.0 & -5.0\end{bmatrix}$, and $\begin{bmatrix}4.0 & 0.0 & 4.0\end{bmatrix}$ (listed in the order of positive rotation)?

721. Point p has a surface color of $\begin{bmatrix}0.5 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.52 & 0.77 & 0.37\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.7 & 0.7\end{bmatrix}$ and direction $\begin{bmatrix}0.55 & 0.81 & 0.2\end{bmatrix}$, what will be the diffuse component of p's final color?

722. Point p has a surface color of $\begin{bmatrix}5.0 & 1.0 & 5.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.32 & 0.44 & 0.84\end{bmatrix}$. Given a light of color $\begin{bmatrix}4.0 & 1.0 & 4.0\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.4 & 0.48\end{bmatrix}$, what will be the diffuse component of p's final color?

723. Given a point location of $\begin{bmatrix}-2.0 & 3.0 & 3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}3.0 & -4.0 & 1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

724. Point p has a surface color of $\begin{bmatrix}1.2 & 0.2 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.11 & 0.59 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}5.0 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.54 & 0.61\end{bmatrix}$, a view direction $\begin{bmatrix}0.22 & 0.44 & 0.87\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 2.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

725. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 1.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.61 & 0.54 & 0.58\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 3.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.21 & 0.78 & 0.59\end{bmatrix}$, a view direction $\begin{bmatrix}0.8 & 0.59 & 0.11\end{bmatrix}$, and an ambient color $\begin{bmatrix}2.0 & 2.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

726. Point p has a surface color of $\begin{bmatrix}1.0 & 0.2 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.54 & 0.61\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 3.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.68 & 0.42 & 0.6\end{bmatrix}$, what will be the diffuse component of p's final color?

727. What is the normal to a triangle defined by vertices $\begin{bmatrix}-4.0 & 0.0 & -5.0\end{bmatrix}$, $\begin{bmatrix}-5.0 & -1.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}-4.0 & 0.0 & 4.0\end{bmatrix}$ (listed in the order of positive rotation)?

728. Given a point location of $\begin{bmatrix}1.0 & 4.0 & -3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-3.0 & 0.0 & -5.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

729. Point p has a surface color of $\begin{bmatrix}1.0 & 0.2 & 1.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.22 & 0.87 & 0.44\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.3 & 1.3 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.79 & 0.2\end{bmatrix}$, a view direction $\begin{bmatrix}0.65 & 0.58 & 0.49\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.5 & 1.0 & 0.5\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

730. Point p has a surface color of $\begin{bmatrix}0.7 & 1.0 & 0.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.23 & 0.9 & 0.37\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 2.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.11 & 0.59\end{bmatrix}$, what will be the diffuse component of p's final color?

731. Given a point location of $\begin{bmatrix}1.0 & -2.0 & -3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-3.0 & 4.0 & 2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

732. Given a point location of $\begin{bmatrix}3.0 & 2.0 & 1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & -5.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

733. Given a point location of $\begin{bmatrix}4.0 & -4.0 & -2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-5.0 & 0.0 & 3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

734. What is the normal to a triangle defined by vertices $\begin{bmatrix}-1.0 & 3.0 & 1.0\end{bmatrix}$, $\begin{bmatrix}0.0 & 3.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}3.0 & -4.0 & -1.0\end{bmatrix}$ (listed in the order of positive rotation)?

735. Point p has a surface color of $\begin{bmatrix}0.7 & 0.7 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.88 & 0.3 & 0.37\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 1.0 & 1.5\end{bmatrix}$ and direction $\begin{bmatrix}0.35 & 0.78 & 0.52\end{bmatrix}$, what will be the diffuse component of p's final color?

736. What is the normal to a triangle defined by vertices $\begin{bmatrix}2.0 & 0.0 & -5.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & -2.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}2.0 & -4.0 & -1.0\end{bmatrix}$ (listed in the order of positive rotation)?

737. Point p has a surface color of $\begin{bmatrix}0.5 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.61 & 0.54\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.5 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.55 & 0.2 & 0.81\end{bmatrix}$, what will be the diffuse component of p's final color?

738. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 0.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.78 & 0.4\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 1.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.61 & 0.54\end{bmatrix}$, a view direction $\begin{bmatrix}0.9 & 0.23 & 0.37\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.2 & 1.2 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

739. What is the normal to a triangle defined by vertices $\begin{bmatrix}-4.0 & 3.0 & 4.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & -3.0 & -4.0\end{bmatrix}$, and $\begin{bmatrix}4.0 & 4.0 & 0.0\end{bmatrix}$ (listed in the order of positive rotation)?

740. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 5.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.4 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.5 & 0.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.87 & 0.44 & 0.22\end{bmatrix}$, a view direction $\begin{bmatrix}0.44 & 0.22 & 0.87\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

741. What is the normal to a triangle defined by vertices $\begin{bmatrix}0.0 & 1.0 & 0.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & -3.0 & 3.0\end{bmatrix}$, and $\begin{bmatrix}3.0 & 0.0 & -1.0\end{bmatrix}$ (listed in the order of positive rotation)?

742. Given a point location of $\begin{bmatrix}-2.0 & -2.0 & 1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}3.0 & -3.0 & -5.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

743. What is the normal to a triangle defined by vertices $\begin{bmatrix}-3.0 & 0.0 & 1.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & -1.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}3.0 & -5.0 & 2.0\end{bmatrix}$ (listed in the order of positive rotation)?

744. Point p has a surface color of $\begin{bmatrix}1.0 & 4.0 & 4.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.7 & 0.22 & 0.68\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 2.0 & 2.5\end{bmatrix}$ and direction $\begin{bmatrix}0.32 & 0.44 & 0.84\end{bmatrix}$, and a view direction $\begin{bmatrix}0.77 & 0.37 & 0.52\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

745. Point p has a surface color of $\begin{bmatrix}0.7 & 1.3 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.52 & 0.35\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 2.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.65 & 0.49\end{bmatrix}$, a view direction $\begin{bmatrix}0.22 & 0.44 & 0.87\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 5.0 & 4.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

746. What is the normal to a triangle defined by vertices $\begin{bmatrix}4.0 & -3.0 & -3.0\end{bmatrix}$, $\begin{bmatrix}-5.0 & 3.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}3.0 & 3.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

747. What is the normal to a triangle defined by vertices $\begin{bmatrix}0.0 & -5.0 & -4.0\end{bmatrix}$, $\begin{bmatrix}-5.0 & -5.0 & -3.0\end{bmatrix}$, and $\begin{bmatrix}1.0 & -3.0 & 0.0\end{bmatrix}$ (listed in the order of positive rotation)?

748. Point p has a surface color of $\begin{bmatrix}0.3 & 1.7 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.37 & 0.23 & 0.9\end{bmatrix}$. Given a light of color $\begin{bmatrix}4.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.2 & 0.58 & 0.79\end{bmatrix}$, what will be the diffuse component of p's final color?

749. Given a point location of $\begin{bmatrix}3.0 & 4.0 & -1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-2.0 & -2.0 & -1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

750. What is the normal to a triangle defined by vertices $\begin{bmatrix}0.0 & 3.0 & 4.0\end{bmatrix}$, $\begin{bmatrix}1.0 & -4.0 & 1.0\end{bmatrix}$, and $\begin{bmatrix}-4.0 & -2.0 & 2.0\end{bmatrix}$ (listed in the order of positive rotation)?

751. Point p has a surface color of $\begin{bmatrix}1.2 & 1.2 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.21 & 0.5 & 0.84\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.3 & 0.3\end{bmatrix}$ and direction $\begin{bmatrix}0.2 & 0.55 & 0.81\end{bmatrix}$, and a view direction $\begin{bmatrix}0.49 & 0.65 & 0.58\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

752. What is the normal to a triangle defined by vertices $\begin{bmatrix}2.0 & 0.0 & 0.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & 2.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}1.0 & 2.0 & -1.0\end{bmatrix}$ (listed in the order of positive rotation)?

753. Point p has a surface color of $\begin{bmatrix}1.0 & 1.2 & 0.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.6 & 0.8 & 0.0\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 1.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.77 & 0.52 & 0.37\end{bmatrix}$, a view direction $\begin{bmatrix}0.52 & 0.78 & 0.35\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 2.5 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

754. What is the normal to a triangle defined by vertices $\begin{bmatrix}-3.0 & -2.0 & -1.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & 0.0 & -4.0\end{bmatrix}$, and $\begin{bmatrix}3.0 & 1.0 & 1.0\end{bmatrix}$ (listed in the order of positive rotation)?

755. Point p has a surface color of $\begin{bmatrix}0.5 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.79 & 0.58 & 0.2\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.5 & 0.84 & 0.21\end{bmatrix}$, and a view direction $\begin{bmatrix}0.6 & 0.0 & 0.8\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

756. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.11 & 0.59 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.69 & 0.48 & 0.54\end{bmatrix}$, what will be the diffuse component of p's final color?

757. Given a point location of $\begin{bmatrix}-4.0 & 2.0 & -2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}2.0 & -5.0 & 1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

758. Point p has a surface color of $\begin{bmatrix}0.2 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.49 & 0.65\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.77 & 0.42\end{bmatrix}$, and a view direction $\begin{bmatrix}0.54 & 0.69 & 0.48\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

759. Point p has a surface color of $\begin{bmatrix}2.0 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.49 & 0.65 & 0.58\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.5 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.9 & 0.37 & 0.23\end{bmatrix}$, what will be the diffuse component of p's final color?

760. What is the normal to a triangle defined by vertices $\begin{bmatrix}-5.0 & -4.0 & -4.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & 2.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}-5.0 & -2.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

761. Point p has a surface color of $\begin{bmatrix}0.3 & 0.7 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.52 & 0.35 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.5 & 1.0 & 1.5\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.59 & 0.11\end{bmatrix}$, and a view direction

$\begin{bmatrix}0.77 & 0.48 & 0.42\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

762. Point p has a surface color of $\begin{bmatrix}1.0 & 0.7 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.65 & 0.58 & 0.49\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 4.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.65 & 0.49 & 0.58\end{bmatrix}$, a view direction $\begin{bmatrix}0.37 & 0.77 & 0.52\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.2 & 0.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

763. What is the normal to a triangle defined by vertices $\begin{bmatrix}-5.0 & 4.0 & 3.0\end{bmatrix}$, $\begin{bmatrix}3.0 & -4.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}2.0 & -1.0 & -3.0\end{bmatrix}$ (listed in the order of positive rotation)?

764. What is the normal to a triangle defined by vertices $\begin{bmatrix}-5.0 & 0.0 & 2.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & -5.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}-4.0 & 3.0 & 3.0\end{bmatrix}$ (listed in the order of positive rotation)?

765. Point p has a surface color of $\begin{bmatrix}1.0 & 0.2 & 0.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.49 & 0.65 & 0.58\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.3 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.87 & 0.22 & 0.44\end{bmatrix}$, a view direction $\begin{bmatrix}0.54 & 0.58 & 0.61\end{bmatrix}$, and an ambient color $\begin{bmatrix}2.0 & 1.0 & 2.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

766. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.0 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}3.0 & 1.0 & 4.0\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.79 & 0.2\end{bmatrix}$, a view direction $\begin{bmatrix}0.8 & 0.59 & 0.11\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.3 & 0.3\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

767. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.6 & 0.01 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.01 & 0.6\end{bmatrix}$, what will be the diffuse component of p's final color?

768. Point p has a surface color of $\begin{bmatrix}0.7 & 1.0 & 0.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.01 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 4.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.59 & 0.21\end{bmatrix}$, and a view direction $\begin{bmatrix}0.42 & 0.68 & 0.6\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

769. Given a point location of $\begin{bmatrix}3.0 & 0.0 & 3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-1.0 & 1.0 & -5.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

770. Point p has a surface color of $\begin{bmatrix}2.0 & 2.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.2 & 0.55 & 0.81\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.5\end{bmatrix}$ and direction $\begin{bmatrix}0.88 & 0.3 & 0.37\end{bmatrix}$, what will be the diffuse component of p's final color?

771. Point p has a surface color of $\begin{bmatrix}0.0 & 4.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.65 & 0.49 & 0.58\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.6 & 0.0 & 0.8\end{bmatrix}$, a view direction $\begin{bmatrix}0.4 & 0.48 & 0.78\end{bmatrix}$, and an ambient color $\begin{bmatrix}2.0 & 5.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

772. Given a point location of $\begin{bmatrix}-5.0 & 1.0 & -4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}2.0 & -3.0 & -2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

773. Point p has a surface color of $\begin{bmatrix}3.0 & 1.0 & 4.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.6 & 0.8 & 0.01\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 4.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.52 & 0.35\end{bmatrix}$, a view direction $\begin{bmatrix}0.58 & 0.79 & 0.2\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

774. Given a point location of $\begin{bmatrix}0.0 & -1.0 & 3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}3.0 & -5.0 & 0.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

775. Given a point location of $\begin{bmatrix}-3.0 & -2.0 & 2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-5.0 & -1.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

776. What is the normal to a triangle defined by vertices $\begin{bmatrix}3.0 & -1.0 & -5.0\end{bmatrix}$, $\begin{bmatrix}4.0 & 3.0 & -5.0\end{bmatrix}$, and $\begin{bmatrix}2.0 & -2.0 & -4.0\end{bmatrix}$ (listed in the order of positive rotation)?

777. Point p has a surface color of $\begin{bmatrix}4.0 & 3.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.59 & 0.21 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.3 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.37 & 0.88 & 0.3\end{bmatrix}$, what will be the diffuse component of p's final color?

778. Point p has a surface color of $\begin{bmatrix}2.0 & 1.0 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.2 & 0.79\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.8 & 1.0 & 0.8\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.01 & 0.6\end{bmatrix}$, what will be the diffuse component of p's final color?

779. What is the normal to a triangle defined by vertices $\begin{bmatrix}-2.0 & -3.0 & 0.0\end{bmatrix}$, $\begin{bmatrix}3.0 & -5.0 & 3.0\end{bmatrix}$, and $\begin{bmatrix}-3.0 & 1.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

780. Point p has a surface color of $\begin{bmatrix}1.7 & 1.3 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.37 & 0.3 & 0.88\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.54 & 0.48 & 0.69\end{bmatrix}$, a view direction $\begin{bmatrix}0.65 & 0.58 & 0.49\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.8 & 1.0 & 0.8\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

781. What is the normal to a triangle defined by vertices $\begin{bmatrix}4.0 & 2.0 & -1.0\end{bmatrix}$, $\begin{bmatrix}1.0 & 4.0 & 1.0\end{bmatrix}$, and $\begin{bmatrix}0.0 & 4.0 & 2.0\end{bmatrix}$ (listed in the order of positive rotation)?

782. Given a point location of $\begin{bmatrix}-1.0 & -5.0 & 4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & -1.0 & -1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

783. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 2.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.37 & 0.52 & 0.77\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 3.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.9 & 0.23 & 0.37\end{bmatrix}$, a view direction $\begin{bmatrix}0.54 & 0.58 & 0.61\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.7 & 1.0 & 0.3\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

784. Point p has a surface color of $\begin{bmatrix}2.0 & 1.0 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.6 & 0.42 & 0.68\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$, what will be the diffuse component of p's final color?

785. Point p has a surface color of $\begin{bmatrix}3.0 & 2.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.0 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 1.0 & 1.2\end{bmatrix}$ and direction $\begin{bmatrix}0.55 & 0.78 & 0.3\end{bmatrix}$, what will be the diffuse component of p's final color?

786. Point p has a surface color of $\begin{bmatrix}0.8 & 0.2 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.77 & 0.52 & 0.37\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.3 & 0.3\end{bmatrix}$ and direction $\begin{bmatrix}0.44 & 0.22 & 0.87\end{bmatrix}$, what will be the diffuse component of p's final color?

787. Point p has a surface color of $\begin{bmatrix}0.2 & 1.0 & 0.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.52 & 0.78 & 0.35\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 1.0 & 0.2\end{bmatrix}$ and direction $\begin{bmatrix}0.6 & 0.01 & 0.8\end{bmatrix}$, what will be the diffuse component of p's final color?

788. Given a point location of $\begin{bmatrix}3.0 & -1.0 & 0.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-4.0 & 4.0 & 3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

789. Point p has a surface color of $\begin{bmatrix}0.7 & 0.7 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.69 & 0.54\end{bmatrix}$. Given a light of color $\begin{bmatrix}5.0 & 1.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.84 & 0.44 & 0.32\end{bmatrix}$, what will be the diffuse component of p's final color?

790. What is the normal to a triangle defined by vertices $\begin{bmatrix}3.0 & -2.0 & -3.0\end{bmatrix}$, $\begin{bmatrix}2.0 & 3.0 & -5.0\end{bmatrix}$, and $\begin{bmatrix}-1.0 & 2.0 & -3.0\end{bmatrix}$ (listed in the order of positive rotation)?

791. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$, $\begin{bmatrix}3.0 & -2.0 & -4.0\end{bmatrix}$, and $\begin{bmatrix}-5.0 & 2.0 & -4.0\end{bmatrix}$ (listed in the order of positive rotation)?

792. Given a point location of $\begin{bmatrix}3.0 & 2.0 & 1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}2.0 & 1.0 & 2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

793. What is the normal to a triangle defined by vertices $\begin{bmatrix}-4.0 & -3.0 & -2.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & 2.0 & -5.0\end{bmatrix}$, and $\begin{bmatrix}-3.0 & 4.0 & -3.0\end{bmatrix}$ (listed in the order of positive rotation)?

794. What is the normal to a triangle defined by vertices $\begin{bmatrix}-5.0 & -4.0 & -1.0\end{bmatrix}$, $\begin{bmatrix}1.0 & -3.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}0.0 & 1.0 & -4.0\end{bmatrix}$ (listed in the order of positive rotation)?

795. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.61 & 0.54\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 1.0 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.52 & 0.35 & 0.78\end{bmatrix}$, what will be the diffuse component of p's final color?

796. Given a point location of $\begin{bmatrix}1.0 & -1.0 & 1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & 1.0 & 4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

797. Point p has a surface color of $\begin{bmatrix}1.0 & 0.5 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.44 & 0.22 & 0.87\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 5.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$, a view direction $\begin{bmatrix}0.77 & 0.48 & 0.42\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.5 & 0.5\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

798. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.42 & 0.77\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.3 & 0.7 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.54 & 0.58 & 0.61\end{bmatrix}$, what will be the diffuse component of p's final color?

799. Given a point location of $\begin{bmatrix}-5.0 & -2.0 & -2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-2.0 & -5.0 & 0.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

800. What is the normal to a triangle defined by vertices $\begin{bmatrix}-3.0 & 1.0 & 0.0\end{bmatrix}$, $\begin{bmatrix}-2.0 & -4.0 & -4.0\end{bmatrix}$, and $\begin{bmatrix}-5.0 & 1.0 & 2.0\end{bmatrix}$ (listed in the order of positive rotation)?

801. What is the normal to a triangle defined by vertices $\begin{bmatrix}4.0 & -5.0 & 3.0\end{bmatrix}$, $\begin{bmatrix}4.0 & -4.0 & -3.0\end{bmatrix}$, and $\begin{bmatrix}-3.0 & -2.0 & 0.0\end{bmatrix}$ (listed in the order of positive rotation)?

802. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 3.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.49 & 0.58 & 0.65\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 0.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.11 & 0.59 & 0.8\end{bmatrix}$, what will be the diffuse component of p's final color?

803. Given a point location of $\begin{bmatrix}2.0 & 1.0 & 0.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-4.0 & 2.0 & -1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

804. Point p has a surface color of $\begin{bmatrix}1.0 & 4.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.79 & 0.58 & 0.2\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.2 & 1.0 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.21 & 0.78 & 0.59\end{bmatrix}$, what will be the diffuse component of p's final color?

805. What is the normal to a triangle defined by vertices $\begin{bmatrix}4.0 & -2.0 & -2.0\end{bmatrix}$, $\begin{bmatrix}2.0 & -4.0 & 1.0\end{bmatrix}$, and $\begin{bmatrix}-5.0 & -1.0 & -5.0\end{bmatrix}$ (listed in the order of positive rotation)?

806. Point p has a surface color of $\begin{bmatrix}0.3 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.68 & 0.7 & 0.22\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.8 & 1.0 & 0.8\end{bmatrix}$ and direction $\begin{bmatrix}0.22 & 0.87 & 0.44\end{bmatrix}$, and a view direction $\begin{bmatrix}0.69 & 0.54 & 0.48\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

807. Point p has a surface color of $\begin{bmatrix}1.0 & 0.8 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.52 & 0.35\end{bmatrix}$. Given a light of color $\begin{bmatrix}4.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.6 & 0.01\end{bmatrix}$, what will be the diffuse component of p's final color?

808. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.55 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.77 & 0.52 & 0.37\end{bmatrix}$, and a view direction $\begin{bmatrix}0.58 & 0.61 & 0.54\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

809. What is the normal to a triangle defined by vertices $\begin{bmatrix}2.0 & 3.0 & -1.0\end{bmatrix}$, $\begin{bmatrix}-5.0 & -2.0 & -4.0\end{bmatrix}$, and $\begin{bmatrix}-1.0 & 4.0 & 2.0\end{bmatrix}$ (listed in the order of positive rotation)?

810. Point p has a surface color of $\begin{bmatrix}3.0 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.3 & 0.37 & 0.88\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.5 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.11 & 0.59\end{bmatrix}$, a view direction $\begin{bmatrix}0.4 & 0.48 & 0.78\end{bmatrix}$, and an ambient color $\begin{bmatrix}2.0 & 1.0 & 0.5\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

811. Point p has a surface color of $\begin{bmatrix}1.0 & 2.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.6 & 0.01 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 5.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.9 & 0.23 & 0.37\end{bmatrix}$, and a view direction $\begin{bmatrix}0.61 & 0.54 & 0.58\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

812. Point p has a surface color of $\begin{bmatrix}1.0 & 1.3 & 1.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.68 & 0.7 & 0.22\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 2.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.32 & 0.44 & 0.84\end{bmatrix}$, a view direction $\begin{bmatrix}0.48 & 0.77 & 0.42\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.0 & 0.8 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

813. What is the normal to a triangle defined by vertices $\begin{bmatrix}-3.0 & -2.0 & 4.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & -4.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}-3.0 & 0.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

814. Given a point location of $\begin{bmatrix}-2.0 & -5.0 & 4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & 2.0 & 0.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

815. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.42 & 0.77 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}4.0 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.37 & 0.77 & 0.52\end{bmatrix}$, a view direction $\begin{bmatrix}0.59 & 0.8 & 0.11\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.0 & 2.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

816. Given a point location of $\begin{bmatrix}-2.0 & -3.0 & -2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-1.0 & -1.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

817. Given a point location of $\begin{bmatrix}-5.0 & -4.0 & -2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-4.0 & 3.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

818. Given a point location of $\begin{bmatrix}-4.0 & 4.0 & -3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}2.0 & 1.0 & 1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

819. Point p has a surface color of $\begin{bmatrix}1.0 & 1.7 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.2 & 0.55 & 0.81\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.5 & 1.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.69 & 0.54\end{bmatrix}$, and a view direction $\begin{bmatrix}0.81 & 0.55 & 0.2\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

820. Given a point location of $\begin{bmatrix}4.0 & 0.0 & -1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-1.0 & -2.0 & 1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

821. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.59 & 0.78 & 0.21\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 5.0 & 4.0\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.11 & 0.59\end{bmatrix}$, what will be the diffuse component of p's final color?

822. Point p has a surface color of $\begin{bmatrix}1.0 & 3.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.59 & 0.8 & 0.11\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 4.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.55 & 0.3\end{bmatrix}$, and a view direction $\begin{bmatrix}0.65 & 0.49 & 0.58\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

823. Point p has a surface color of $\begin{bmatrix}0.5 & 2.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.49 & 0.58 & 0.65\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.5 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.77 & 0.52 & 0.37\end{bmatrix}$, what will be the diffuse component of p's final color?

824. Point p has a surface color of $\begin{bmatrix}1.0 & 4.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 1.0 & 0.8\end{bmatrix}$ and direction $\begin{bmatrix}0.69 & 0.54 & 0.48\end{bmatrix}$, a view direction $\begin{bmatrix}0.9 & 0.23 & 0.37\end{bmatrix}$, and an ambient color $\begin{bmatrix}3.0 & 5.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

825. Point p has a surface color of $\begin{bmatrix}1.0 & 4.0 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.6 & 0.0\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 5.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.22 & 0.87 & 0.44\end{bmatrix}$, what will be the diffuse component of p's final color?

826. What is the normal to a triangle defined by vertices $\begin{bmatrix}4.0 & 4.0 & -5.0\end{bmatrix}$, $\begin{bmatrix}-2.0 & 3.0 & 2.0\end{bmatrix}$, and $\begin{bmatrix}-1.0 & 2.0 & -4.0\end{bmatrix}$ (listed in the order of positive rotation)?

827. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.42 & 0.6 & 0.68\end{bmatrix}$. Given a light of color $\begin{bmatrix}5.0 & 1.0 & 4.0\end{bmatrix}$ and direction $\begin{bmatrix}0.44 & 0.32 & 0.84\end{bmatrix}$, what will be the diffuse component of p's final color?

828. What is the normal to a triangle defined by vertices $\begin{bmatrix}0.0 & 4.0 & -5.0\end{bmatrix}$, $\begin{bmatrix}1.0 & 3.0 & -3.0\end{bmatrix}$, and $\begin{bmatrix}4.0 & -3.0 & 1.0\end{bmatrix}$ (listed in the order of positive rotation)?

829. Given a point location of $\begin{bmatrix}-2.0 & -4.0 & 2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-4.0 & 3.0 & -1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

830. Point p has a surface color of $\begin{bmatrix}1.3 & 1.0 & 0.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.32 & 0.84 & 0.44\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 5.0\end{bmatrix}$ and direction $\begin{bmatrix}0.44 & 0.84 & 0.32\end{bmatrix}$, a view direction $\begin{bmatrix}0.5 & 0.21 & 0.84\end{bmatrix}$, and an ambient color $\begin{bmatrix}2.5 & 0.5 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

831. Point p has a surface color of $\begin{bmatrix}1.7 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.55 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.3 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.35 & 0.52\end{bmatrix}$, and a view direction $\begin{bmatrix}0.7 & 0.22 & 0.68\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

832. Point p has a surface color of $\begin{bmatrix}0.7 & 0.7 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.61 & 0.54\end{bmatrix}$. Given a light of color $\begin{bmatrix}4.0 & 2.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.35 & 0.78 & 0.52\end{bmatrix}$, what will be the diffuse component of p's final color?

833. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.6 & 0.0 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.3 & 1.3\end{bmatrix}$ and direction $\begin{bmatrix}0.22 & 0.87 & 0.44\end{bmatrix}$, what will be the diffuse component of p's final color?

834. Given a point location of $\begin{bmatrix}0.0 & -2.0 & -1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-3.0 & 0.0 & -2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

835. Point p has a surface color of $\begin{bmatrix}0.0 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.69 & 0.54\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.3 & 1.0 & 1.3\end{bmatrix}$ and direction $\begin{bmatrix}0.0 & 0.6 & 0.8\end{bmatrix}$, a view direction $\begin{bmatrix}0.8 & 0.6 & 0.01\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

836. Point p has a surface color of $\begin{bmatrix}5.0 & 2.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.9 & 0.37 & 0.23\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 0.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.4 & 0.78 & 0.48\end{bmatrix}$, and a view direction $\begin{bmatrix}0.11 & 0.8 & 0.59\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

837. Point p has a surface color of $\begin{bmatrix}0.8 & 1.0 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.9 & 0.37 & 0.23\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 5.0\end{bmatrix}$ and direction $\begin{bmatrix}0.37 & 0.9 & 0.23\end{bmatrix}$, and a view direction $\begin{bmatrix}0.81 & 0.55 & 0.2\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

838. Point p has a surface color of $\begin{bmatrix}1.5 & 1.0 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.87 & 0.22 & 0.44\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 4.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.6 & 0.42 & 0.68\end{bmatrix}$, a view direction $\begin{bmatrix}0.84 & 0.5 & 0.21\end{bmatrix}$, and an ambient color $\begin{bmatrix}5.0 & 1.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

839. What is the normal to a triangle defined by vertices $\begin{bmatrix}0.0 & 4.0 & -4.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & 4.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}-1.0 & 4.0 & -3.0\end{bmatrix}$ (listed in the order of positive rotation)?

840. Point p has a surface color of $\begin{bmatrix}1.0 & 0.3 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.69 & 0.54\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 5.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.81 & 0.2 & 0.55\end{bmatrix}$, what will be the diffuse component of p's final color?

841. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.35 & 0.52\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.59 & 0.8 & 0.11\end{bmatrix}$, a view direction $\begin{bmatrix}0.35 & 0.78 & 0.52\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.5 & 1.0 & 0.5\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

842. Point p has a surface color of $\begin{bmatrix}0.5 & 1.0 & 0.8\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.69 & 0.48 & 0.54\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 5.0 & 5.0\end{bmatrix}$ and direction $\begin{bmatrix}0.42 & 0.77 & 0.48\end{bmatrix}$, and a view direction $\begin{bmatrix}0.52 & 0.78 & 0.35\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

843. Point p has a surface color of $\begin{bmatrix}2.0 & 2.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.0 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.8 & 1.0 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.32 & 0.84 & 0.44\end{bmatrix}$, and a view direction $\begin{bmatrix}0.49 & 0.65 & 0.58\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

844. Point p has a surface color of $\begin{bmatrix}4.0 & 1.0 & 4.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.35 & 0.52 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.35 & 0.52 & 0.78\end{bmatrix}$, what will be the diffuse component of p's final color?

845. Point p has a surface color of $\begin{bmatrix}4.0 & 2.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.55 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 4.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.35 & 0.78 & 0.52\end{bmatrix}$, and a view direction $\begin{bmatrix}0.54 & 0.61 & 0.58\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

846. Given a point location of $\begin{bmatrix}-5.0 & -4.0 & 4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}0.0 & 0.0 & -5.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

847. What is the normal to a triangle defined by vertices $\begin{bmatrix}-5.0 & -3.0 & -5.0\end{bmatrix}$, $\begin{bmatrix}-3.0 & 4.0 & -1.0\end{bmatrix}$, and $\begin{bmatrix}1.0 & -1.0 & -1.0\end{bmatrix}$ (listed in the order of positive rotation)?

848. Point p has a surface color of $\begin{bmatrix}0.0 & 3.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.58 & 0.2 & 0.79\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.0 & 0.2\end{bmatrix}$ and direction $\begin{bmatrix}0.5 & 0.21 & 0.84\end{bmatrix}$, a view direction $\begin{bmatrix}0.4 & 0.48 & 0.78\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.5 & 1.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

849. Point p has a surface color of $\begin{bmatrix}1.0 & 5.0 & 4.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.55 & 0.78 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.2 & 0.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.84 & 0.5 & 0.21\end{bmatrix}$, what will be the diffuse component of p's final color?

850. Given a point location of $\begin{bmatrix}-5.0 & 0.0 & -5.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & 2.0 & 4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

851. Point p has a surface color of $\begin{bmatrix}1.0 & 2.0 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.32 & 0.44 & 0.84\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.2 & 0.8 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.6 & 0.8 & 0.01\end{bmatrix}$, a view direction $\begin{bmatrix}0.37 & 0.9 & 0.23\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 2.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

852. Point p has a surface color of $\begin{bmatrix}2.0 & 2.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.2 & 0.79 & 0.58\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.8 & 0.8\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.55 & 0.3\end{bmatrix}$, what will be the diffuse component of p's final color?

853. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.3 & 0.55\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.3 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.37 & 0.88\end{bmatrix}$, and a view direction $\begin{bmatrix}0.32 & 0.84 & 0.44\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

854. What is the normal to a triangle defined by vertices $\begin{bmatrix}-5.0 & -4.0 & -3.0\end{bmatrix}$, $\begin{bmatrix}-2.0 & -4.0 & 3.0\end{bmatrix}$, and $\begin{bmatrix}4.0 & 0.0 & 3.0\end{bmatrix}$ (listed in the order of positive rotation)?

855. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.22 & 0.7 & 0.68\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.5\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.88 & 0.37\end{bmatrix}$, a view direction $\begin{bmatrix}0.42 & 0.48 & 0.77\end{bmatrix}$, and an ambient color $\begin{bmatrix}3.0 & 1.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

856. Point p has a surface color of $\begin{bmatrix}1.0 & 5.0 & 4.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.44 & 0.22 & 0.87\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 5.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.42 & 0.77\end{bmatrix}$, a view direction $\begin{bmatrix}0.78 & 0.4 & 0.48\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.0 & 3.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

857. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 4.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.0 & 0.6 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.7 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.61 & 0.54 & 0.58\end{bmatrix}$, what will be the diffuse component of p's final color?

858. Point p has a surface color of $\begin{bmatrix}3.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.21 & 0.84 & 0.5\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.88 & 0.37 & 0.3\end{bmatrix}$, and a view direction $\begin{bmatrix}0.78 & 0.59 & 0.21\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

859. Point p has a surface color of $\begin{bmatrix}1.0 & 1.3 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.68 & 0.7 & 0.22\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.7 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.65 & 0.58 & 0.49\end{bmatrix}$, a view direction $\begin{bmatrix}0.42 & 0.48 & 0.77\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 1.7\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

860. Point p has a surface color of $\begin{bmatrix}1.0 & 1.2 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.78 & 0.4\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 1.0 & 1.5\end{bmatrix}$ and direction $\begin{bmatrix}0.37 & 0.3 & 0.88\end{bmatrix}$, a view direction $\begin{bmatrix}0.78 & 0.3 & 0.55\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.3 & 1.7\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

861. Given a point location of $\begin{bmatrix}-2.0 & -2.0 & -2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}0.0 & -4.0 & 0.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

862. What is the normal to a triangle defined by vertices $\begin{bmatrix}-2.0 & -5.0 & -5.0\end{bmatrix}$, $\begin{bmatrix}4.0 & -3.0 & -3.0\end{bmatrix}$, and $\begin{bmatrix}3.0 & -5.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

863. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 0.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.0 & 0.8 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 1.0 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.42 & 0.68 & 0.6\end{bmatrix}$, what will be the diffuse component of p's final color?

864. What is the normal to a triangle defined by vertices $\begin{bmatrix}-3.0 & 3.0 & -3.0\end{bmatrix}$, $\begin{bmatrix}3.0 & -1.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}-4.0 & -5.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

865. Given a point location of $\begin{bmatrix}0.0 & 2.0 & -2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}2.0 & 2.0 & -2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

866. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.84 & 0.44 & 0.32\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 5.0\end{bmatrix}$ and direction $\begin{bmatrix}0.59 & 0.8 & 0.11\end{bmatrix}$, a view direction $\begin{bmatrix}0.3 & 0.55 & 0.78\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.0 & 1.0 & 2.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

867. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 0.8\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.49 & 0.58 & 0.65\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.65 & 0.49 & 0.58\end{bmatrix}$, and a view direction $\begin{bmatrix}0.22 & 0.68 & 0.7\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

868. Given a point location of $\begin{bmatrix}-3.0 & 3.0 & -4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}1.0 & -5.0 & -5.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

869. Point p has a surface color of $\begin{bmatrix}1.7 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.21 & 0.84 & 0.5\end{bmatrix}$. Given a light of color $\begin{bmatrix}5.0 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.59 & 0.8 & 0.11\end{bmatrix}$, a view direction $\begin{bmatrix}0.44 & 0.32 & 0.84\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.8 & 0.5\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

870. Point p has a surface color of $\begin{bmatrix}1.3 & 1.0 & 1.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.37 & 0.88 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 1.0 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.61 & 0.54\end{bmatrix}$, a view direction $\begin{bmatrix}0.78 & 0.59 & 0.21\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.0 & 0.7\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

871. What is the normal to a triangle defined by vertices $\begin{bmatrix}3.0 & -2.0 & 4.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & 2.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}1.0 & 0.0 & 2.0\end{bmatrix}$ (listed in the order of positive rotation)?

872. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 5.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.6 & 0.0\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.5 & 1.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.77 & 0.52 & 0.37\end{bmatrix}$, what will be the diffuse component of p's final color?

873. Point p has a surface color of $\begin{bmatrix}1.0 & 1.7 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.37 & 0.3 & 0.88\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.7 & 0.7\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.65 & 0.49\end{bmatrix}$, what will be the diffuse component of p's final color?

874. Point p has a surface color of $\begin{bmatrix}2.5 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.59 & 0.11 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 4.0 & 5.0\end{bmatrix}$ and direction $\begin{bmatrix}0.37 & 0.52 & 0.77\end{bmatrix}$, what will be the diffuse component of p's final color?

875. Point p has a surface color of $\begin{bmatrix}1.0 & 0.5 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.21 & 0.59 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.55 & 0.78\end{bmatrix}$, and a view direction $\begin{bmatrix}0.65 & 0.49 & 0.58\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

876. Point p has a surface color of $\begin{bmatrix}3.0 & 5.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.37 & 0.23 & 0.9\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.55 & 0.78 & 0.3\end{bmatrix}$, what will be the diffuse component of p's final color?

877. Given a point location of $\begin{bmatrix}1.0 & 2.0 & -4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & 0.0 & -1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

878. What is the normal to a triangle defined by vertices $\begin{bmatrix}-4.0 & 2.0 & -1.0\end{bmatrix}$, $\begin{bmatrix}-5.0 & 3.0 & 1.0\end{bmatrix}$, and $\begin{bmatrix}0.0 & -3.0 & 4.0\end{bmatrix}$ (listed in the order of positive rotation)?

879. Given a point location of $\begin{bmatrix}-2.0 & -2.0 & -5.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-4.0 & -5.0 & 1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

880. Given a point location of $\begin{bmatrix}-4.0 & 1.0 & 2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}0.0 & 3.0 & 2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

881. Point p has a surface color of $\begin{bmatrix}0.0 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.87 & 0.22 & 0.44\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.11 & 0.59\end{bmatrix}$, a view direction $\begin{bmatrix}0.78 & 0.21 & 0.59\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.0 & 0.5\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

882. Point p has a surface color of $\begin{bmatrix}0.5 & 1.0 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.81 & 0.55 & 0.2\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.3 & 0.7 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.69 & 0.48 & 0.54\end{bmatrix}$, what will be the diffuse component of p's final color?

883. What is the normal to a triangle defined by vertices $\begin{bmatrix}-3.0 & 1.0 & 3.0\end{bmatrix}$, $\begin{bmatrix}-3.0 & 2.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}-2.0 & -3.0 & -5.0\end{bmatrix}$ (listed in the order of positive rotation)?

884. Point p has a surface color of $\begin{bmatrix}1.0 & 1.7 & 1.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.42 & 0.6 & 0.68\end{bmatrix}$. Given a light of color $\begin{bmatrix}4.0 & 1.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.42 & 0.77 & 0.48\end{bmatrix}$, what will be the diffuse component of p's final color?

885. What is the normal to a triangle defined by vertices $\begin{bmatrix}3.0 & 4.0 & -1.0\end{bmatrix}$, $\begin{bmatrix}-2.0 & -1.0 & -4.0\end{bmatrix}$, and $\begin{bmatrix}-1.0 & -5.0 & -1.0\end{bmatrix}$ (listed in the order of positive rotation)?

886. Point p has a surface color of $\begin{bmatrix}0.2 & 0.8 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.0 & 0.6 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.7 & 1.0 & 1.3\end{bmatrix}$ and direction $\begin{bmatrix}0.65 & 0.49 & 0.58\end{bmatrix}$, a view direction $\begin{bmatrix}0.2 & 0.81 & 0.55\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.5 & 1.0 & 0.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

887. Point p has a surface color of $\begin{bmatrix}1.0 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.2 & 0.55 & 0.81\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.3\end{bmatrix}$ and direction $\begin{bmatrix}0.87 & 0.22 & 0.44\end{bmatrix}$, what will be the diffuse component of p's final color?

888. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.5 & 0.84 & 0.21\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.81 & 0.55 & 0.2\end{bmatrix}$, and a view direction $\begin{bmatrix}0.59 & 0.21 & 0.78\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

889. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.3 & 0.55 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}3.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.81 & 0.55 & 0.2\end{bmatrix}$, what will be the diffuse component of p's final color?

890. Point p has a surface color of $\begin{bmatrix}2.5 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.21 & 0.5 & 0.84\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.6 & 0.42 & 0.68\end{bmatrix}$, a view direction $\begin{bmatrix}0.65 & 0.58 & 0.49\end{bmatrix}$, and an ambient color $\begin{bmatrix}3.0 & 1.0 & 4.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

891. Given a point location of $\begin{bmatrix}1.0 & 4.0 & -2.0\end{bmatrix}$ and a light location of $\begin{bmatrix}3.0 & -5.0 & 3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

892. Given a point location of $\begin{bmatrix}1.0 & 1.0 & 3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-2.0 & -3.0 & 3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

893. Point p has a surface color of $\begin{bmatrix}0.3 & 1.0 & 0.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.44 & 0.22 & 0.87\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.5 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.23 & 0.9 & 0.37\end{bmatrix}$, what will be the diffuse component of p's final color?

894. Point p has a surface color of $\begin{bmatrix}1.5 & 1.0 & 1.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.2 & 0.58 & 0.79\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.8 & 1.0 & 0.8\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.54 & 0.69\end{bmatrix}$, a view direction $\begin{bmatrix}0.22 & 0.7 & 0.68\end{bmatrix}$, and an ambient color $\begin{bmatrix}4.0 & 3.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

895. Point p has a surface color of $\begin{bmatrix}0.7 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.84 & 0.44 & 0.32\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 3.0 & 4.0\end{bmatrix}$ and direction $\begin{bmatrix}0.84 & 0.32 & 0.44\end{bmatrix}$, a view direction $\begin{bmatrix}0.48 & 0.77 & 0.42\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.7 & 1.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

896. Given a point location of $\begin{bmatrix}-5.0 & -5.0 & 0.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-1.0 & 3.0 & -5.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

897. Point p has a surface color of $\begin{bmatrix}0.0 & 0.2 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.44 & 0.87 & 0.22\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 4.0 & 3.0\end{bmatrix}$ and direction $\begin{bmatrix}0.5 & 0.21 & 0.84\end{bmatrix}$, a view direction $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 3.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

898. Point p has a surface color of $\begin{bmatrix}0.0 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.44 & 0.22 & 0.87\end{bmatrix}$. Given a light of color $\begin{bmatrix}3.0 & 1.0 & 3.0\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.78 & 0.55\end{bmatrix}$, a view direction $\begin{bmatrix}0.6 & 0.0 & 0.8\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

899. Given a point location of $\begin{bmatrix}1.0 & -4.0 & 3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-4.0 & 2.0 & -2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

900. Given a point location of $\begin{bmatrix}0.0 & -5.0 & 4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-3.0 & 0.0 & 4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

901. Given a point location of $\begin{bmatrix}-2.0 & -4.0 & 1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}2.0 & -3.0 & -5.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

902. Given a point location of $\begin{bmatrix}-5.0 & -2.0 & -4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-1.0 & -5.0 & 1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

903. Point p has a surface color of $\begin{bmatrix}2.0 & 1.0 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.3 & 0.88 & 0.37\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.5 & 1.0 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.6 & 0.01\end{bmatrix}$, a view direction $\begin{bmatrix}0.52 & 0.37 & 0.77\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.0 & 0.8\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

904. Point p has a surface color of $\begin{bmatrix}1.0 & 0.5 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.2 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.81 & 0.2 & 0.55\end{bmatrix}$, and a view direction $\begin{bmatrix}0.35 & 0.78 & 0.52\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

905. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & -4.0 & -5.0\end{bmatrix}$, $\begin{bmatrix}0.0 & -5.0 & -5.0\end{bmatrix}$, and $\begin{bmatrix}0.0 & -5.0 & -4.0\end{bmatrix}$ (listed in the order of positive rotation)?

906. Given a point location of $\begin{bmatrix}-2.0 & -3.0 & -1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}2.0 & 0.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

907. Point p has a surface color of $\begin{bmatrix}0.5 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.3 & 0.37 & 0.88\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.88 & 0.37\end{bmatrix}$, what will be the diffuse component of p's final color?

908. Point p has a surface color of $\begin{bmatrix}1.0 & 1.7 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.3 & 0.55 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 5.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.2 & 0.79 & 0.58\end{bmatrix}$, a view direction $\begin{bmatrix}0.6 & 0.42 & 0.68\end{bmatrix}$,

and an ambient color $\begin{bmatrix}4.0 & 1.0 & 5.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

909. What is the normal to a triangle defined by vertices $\begin{bmatrix}-2.0 & -5.0 & 1.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & -4.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}-4.0 & 4.0 & -4.0\end{bmatrix}$ (listed in the order of positive rotation)?

910. Point p has a surface color of $\begin{bmatrix}4.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.49 & 0.58 & 0.65\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 4.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.65 & 0.49 & 0.58\end{bmatrix}$, what will be the diffuse component of p's final color?

911. What is the normal to a triangle defined by vertices $\begin{bmatrix}4.0 & -3.0 & 2.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & -4.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}0.0 & 2.0 & -3.0\end{bmatrix}$ (listed in the order of positive rotation)?

912. Point p has a surface color of $\begin{bmatrix}0.5 & 1.0 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.21 & 0.59 & 0.78\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.21 & 0.5 & 0.84\end{bmatrix}$, and a view direction $\begin{bmatrix}0.21 & 0.59 & 0.78\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

913. Point p has a surface color of $\begin{bmatrix}4.0 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.35 & 0.78 & 0.52\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.5 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.49 & 0.65\end{bmatrix}$, what will be the diffuse component of p's final color?

914. Point p has a surface color of $\begin{bmatrix}0.2 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.84 & 0.32 & 0.44\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.5 & 1.0 & 2.5\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.11 & 0.59\end{bmatrix}$, and a view direction $\begin{bmatrix}0.11 & 0.8 & 0.59\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

915. What is the normal to a triangle defined by vertices $\begin{bmatrix}4.0 & -4.0 & -4.0\end{bmatrix}$, $\begin{bmatrix}-3.0 & -4.0 & 2.0\end{bmatrix}$, and $\begin{bmatrix}2.0 & 3.0 & 1.0\end{bmatrix}$ (listed in the order of positive rotation)?

916. Point p has a surface color of $\begin{bmatrix}1.7 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.01 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.78 & 0.4\end{bmatrix}$, and a view direction $\begin{bmatrix}0.59 & 0.78 & 0.21\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

917. Point p has a surface color of $\begin{bmatrix}0.0 & 1.0 & 0.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.3 & 0.55\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 1.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$, what will be the diffuse component of p's final color?

918. Point p has a surface color of $\begin{bmatrix}0.5 & 1.0 & 0.8\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.5 & 0.21 & 0.84\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 0.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.5 & 0.84 & 0.21\end{bmatrix}$, a view direction $\begin{bmatrix}0.11 & 0.8 & 0.59\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.2 & 1.0 & 1.2\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

919. Given a point location of $\begin{bmatrix}-2.0 & -2.0 & 1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}0.0 & 1.0 & -3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

920. What is the normal to a triangle defined by vertices $\begin{bmatrix}-2.0 & 2.0 & 0.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & 1.0 & -1.0\end{bmatrix}$, and $\begin{bmatrix}0.0 & -4.0 & -2.0\end{bmatrix}$ (listed in the order of positive rotation)?

921. What is the normal to a triangle defined by vertices $\begin{bmatrix}-1.0 & -5.0 & 0.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & -5.0 & -4.0\end{bmatrix}$, and $\begin{bmatrix}3.0 & 0.0 & 0.0\end{bmatrix}$ (listed in the order of positive rotation)?

922. Point p has a surface color of $\begin{bmatrix}2.5 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.68 & 0.6 & 0.42\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.0 & 4.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.59 & 0.11\end{bmatrix}$, and a view direction $\begin{bmatrix}0.77 & 0.37 & 0.52\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

923. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.8\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.55 & 0.2 & 0.81\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.7 & 1.7\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.78 & 0.55\end{bmatrix}$, and a view direction $\begin{bmatrix}0.54 & 0.58 & 0.61\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

924. What is the normal to a triangle defined by vertices $\begin{bmatrix}-4.0 & 3.0 & -4.0\end{bmatrix}$, $\begin{bmatrix}4.0 & 2.0 & -1.0\end{bmatrix}$, and $\begin{bmatrix}4.0 & -3.0 & -4.0\end{bmatrix}$ (listed in the order of positive rotation)?

925. Given a point location of $\begin{bmatrix}1.0 & 4.0 & -5.0\end{bmatrix}$ and a light location of $\begin{bmatrix}1.0 & -5.0 & -2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

926. Point p has a surface color of $\begin{bmatrix}1.0 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.48 & 0.4\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.5 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.59 & 0.78 & 0.21\end{bmatrix}$, a view direction $\begin{bmatrix}0.37 & 0.3 & 0.88\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.3 & 1.0 & 1.7\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

927. Given a point location of $\begin{bmatrix}1.0 & -5.0 & -1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-1.0 & -1.0 & -5.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

928. What is the normal to a triangle defined by vertices $\begin{bmatrix}-4.0 & 4.0 & 3.0\end{bmatrix}$, $\begin{bmatrix}-2.0 & -5.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}-5.0 & -5.0 & -3.0\end{bmatrix}$ (listed in the order of positive rotation)?

929. Point p has a surface color of $\begin{bmatrix}1.0 & 0.5 & 0.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.6 & 0.8 & 0.0\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 3.0\end{bmatrix}$ and direction $\begin{bmatrix}0.23 & 0.9 & 0.37\end{bmatrix}$, what will be the diffuse component of p's final color?

930. Point p has a surface color of $\begin{bmatrix}1.0 & 2.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.55 & 0.81 & 0.2\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.87 & 0.44 & 0.22\end{bmatrix}$, and a view direction $\begin{bmatrix}0.2 & 0.58 & 0.79\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

931. Point p has a surface color of $\begin{bmatrix}1.7 & 0.3 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.22 & 0.7 & 0.68\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 2.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.21 & 0.59 & 0.78\end{bmatrix}$, what will be the diffuse component of p's final color?

932. Given a point location of $\begin{bmatrix}3.0 & -5.0 & -3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & 0.0 & -1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

933. Point p has a surface color of $\begin{bmatrix}1.7 & 0.3 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.81 & 0.2 & 0.55\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.88 & 0.37 & 0.3\end{bmatrix}$, a view direction $\begin{bmatrix}0.42 & 0.77 & 0.48\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 0.5 & 0.8\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

934. Given a point location of $\begin{bmatrix}1.0 & -1.0 & -1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & 0.0 & -3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

935. What is the normal to a triangle defined by vertices $\begin{bmatrix}2.0 & 3.0 & -5.0\end{bmatrix}$, $\begin{bmatrix}1.0 & -3.0 & 3.0\end{bmatrix}$, and $\begin{bmatrix}1.0 & 1.0 & -3.0\end{bmatrix}$ (listed in the order of positive rotation)?

936. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 4.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.84 & 0.21 & 0.5\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 1.0 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.42 & 0.6 & 0.68\end{bmatrix}$, what will be the diffuse component of p's final color?

937. Given a point location of $\begin{bmatrix}-3.0 & -3.0 & 4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-1.0 & -5.0 & 2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

938. Point p has a surface color of $\begin{bmatrix}2.5 & 1.0 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.7 & 0.22 & 0.68\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.0 & 0.8\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.59 & 0.11\end{bmatrix}$, and a view direction $\begin{bmatrix}0.6 & 0.0 & 0.8\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

939. Given a point location of $\begin{bmatrix}1.0 & -4.0 & 4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-5.0 & -1.0 & -2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

940. Given a point location of $\begin{bmatrix}1.0 & 3.0 & -3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-5.0 & -2.0 & 4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

941. Given a point location of $\begin{bmatrix}4.0 & -1.0 & 1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-2.0 & 4.0 & -1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

942. Point p has a surface color of $\begin{bmatrix}2.0 & 4.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.3 & 0.88 & 0.37\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.54 & 0.69\end{bmatrix}$, and a view direction $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

943. Point p has a surface color of $\begin{bmatrix}3.0 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.77 & 0.48 & 0.42\end{bmatrix}$. Given a light of color $\begin{bmatrix}4.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.35 & 0.78 & 0.52\end{bmatrix}$, a view direction $\begin{bmatrix}0.48 & 0.42 & 0.77\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.2 & 0.5 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

944. Given a point location of $\begin{bmatrix}-3.0 & -1.0 & 3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}0.0 & 0.0 & -2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

945. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & 0.0 & 2.0\end{bmatrix}$, $\begin{bmatrix}-3.0 & 0.0 & -3.0\end{bmatrix}$, and $\begin{bmatrix}-4.0 & -5.0 & -1.0\end{bmatrix}$ (listed in the order of positive rotation)?

946. Point p has a surface color of $\begin{bmatrix}0.5 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.01 & 0.6 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.0 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.52 & 0.35\end{bmatrix}$, and a view direction $\begin{bmatrix}0.2 & 0.79 & 0.58\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

947. Point p has a surface color of $\begin{bmatrix}1.0 & 1.2 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.42 & 0.48 & 0.77\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 4.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.58 & 0.2 & 0.79\end{bmatrix}$, a view direction $\begin{bmatrix}0.3 & 0.88 & 0.37\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.3 & 1.0 & 0.7\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

948. Point p has a surface color of $\begin{bmatrix}0.8 & 0.2 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.49 & 0.58 & 0.65\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 3.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.88 & 0.3 & 0.37\end{bmatrix}$, what will be the diffuse component of p's final color?

949. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.3\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.37 & 0.3 & 0.88\end{bmatrix}$. Given a light of color $\begin{bmatrix}3.0 & 1.0 & 2.0\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.78 & 0.55\end{bmatrix}$, what will be the diffuse component of p's final color?

950. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 3.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.88 & 0.3 & 0.37\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.3 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.35 & 0.52 & 0.78\end{bmatrix}$, and a view direction $\begin{bmatrix}0.78 & 0.4 & 0.48\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

951. Point p has a surface color of $\begin{bmatrix}0.0 & 4.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.3 & 0.78 & 0.55\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.8 & 0.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.49 & 0.58 & 0.65\end{bmatrix}$, and a view direction $\begin{bmatrix}0.8 & 0.6 & 0.0\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

952. Given a point location of $\begin{bmatrix}1.0 & 0.0 & -1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}1.0 & 1.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

953. What is the normal to a triangle defined by vertices $\begin{bmatrix}-1.0 & -1.0 & 0.0\end{bmatrix}$, $\begin{bmatrix}-3.0 & -3.0 & -5.0\end{bmatrix}$, and $\begin{bmatrix}-4.0 & -2.0 & -5.0\end{bmatrix}$ (listed in the order of positive rotation)?

954. Given a point location of $\begin{bmatrix}1.0 & -2.0 & 0.0\end{bmatrix}$ and a light location of $\begin{bmatrix}0.0 & -4.0 & 3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

955. Given a point location of $\begin{bmatrix}-5.0 & -1.0 & 3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}0.0 & -3.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

956. What is the normal to a triangle defined by vertices $\begin{bmatrix}-3.0 & -3.0 & 1.0\end{bmatrix}$, $\begin{bmatrix}0.0 & -4.0 & 4.0\end{bmatrix}$, and $\begin{bmatrix}-3.0 & 3.0 & -5.0\end{bmatrix}$ (listed in the order of positive rotation)?

957. Point p has a surface color of $\begin{bmatrix}1.5 & 1.0 & 2.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.11 & 0.59\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.2 & 0.8 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.0 & 0.6\end{bmatrix}$, and a view direction $\begin{bmatrix}0.44 & 0.87 & 0.22\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

958. Point p has a surface color of $\begin{bmatrix}0.8 & 0.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.3 & 0.78 & 0.55\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.3 & 0.3 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.69 & 0.54\end{bmatrix}$, a view direction $\begin{bmatrix}0.58 & 0.54 & 0.61\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.8 & 0.5 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

959. Point p has a surface color of $\begin{bmatrix}1.5 & 2.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.0 & 0.6\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.2 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.22 & 0.68 & 0.7\end{bmatrix}$, a view direction $\begin{bmatrix}0.68 & 0.42 & 0.6\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.5 & 0.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

960. What is the normal to a triangle defined by vertices $\begin{bmatrix}1.0 & 0.0 & -2.0\end{bmatrix}$, $\begin{bmatrix}2.0 & 0.0 & 1.0\end{bmatrix}$, and $\begin{bmatrix}-2.0 & -4.0 & 3.0\end{bmatrix}$ (listed in the order of positive rotation)?

961. Point p has a surface color of $\begin{bmatrix}1.2 & 1.0 & 0.8\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.55 & 0.2 & 0.81\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 4.0 & 3.0\end{bmatrix}$ and direction $\begin{bmatrix}0.37 & 0.23 & 0.9\end{bmatrix}$, a view direction $\begin{bmatrix}0.37 & 0.88 & 0.3\end{bmatrix}$, and an ambient color $\begin{bmatrix}2.0 & 3.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

962. What is the normal to a triangle defined by vertices $\begin{bmatrix}-2.0 & -5.0 & -3.0\end{bmatrix}$, $\begin{bmatrix}4.0 & 2.0 & 2.0\end{bmatrix}$, and $\begin{bmatrix}-1.0 & 3.0 & -4.0\end{bmatrix}$ (listed in the order of positive rotation)?

963. Point p has a surface color of $\begin{bmatrix}1.0 & 0.0 & 2.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.55 & 0.2 & 0.81\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.8 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.6 & 0.01\end{bmatrix}$, a view direction $\begin{bmatrix}0.58 & 0.49 & 0.65\end{bmatrix}$, and an ambient color $\begin{bmatrix}4.0 & 1.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

964. Point p has a surface color of $\begin{bmatrix}1.0 & 3.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.42 & 0.48 & 0.77\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.3 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.59 & 0.8 & 0.11\end{bmatrix}$, a view direction $\begin{bmatrix}0.69 & 0.48 & 0.54\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 4.0 & 4.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

965. What is the normal to a triangle defined by vertices $\begin{bmatrix}-2.0 & -3.0 & -2.0\end{bmatrix}$, $\begin{bmatrix}0.0 & -2.0 & 3.0\end{bmatrix}$, and $\begin{bmatrix}-1.0 & 3.0 & 0.0\end{bmatrix}$ (listed in the order of positive rotation)?

966. Point p has a surface color of $\begin{bmatrix}2.0 & 1.0 & 1.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.6 & 0.42 & 0.68\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 1.0 & 1.5\end{bmatrix}$ and direction $\begin{bmatrix}0.77 & 0.37 & 0.52\end{bmatrix}$, what will be the diffuse component of p's final color?

967. Given a point location of $\begin{bmatrix}0.0 & -4.0 & 0.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & -5.0 & -2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

968. Point p has a surface color of $\begin{bmatrix}0.2 & 0.2 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.59 & 0.11\end{bmatrix}$. Given a light of color $\begin{bmatrix}5.0 & 4.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.21 & 0.59 & 0.78\end{bmatrix}$, and a view direction $\begin{bmatrix}0.3 & 0.88 & 0.37\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

969. Given a point location of $\begin{bmatrix}2.0 & -1.0 & 3.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & 2.0 & 1.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

970. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.42 & 0.77 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.7 & 0.7\end{bmatrix}$ and direction $\begin{bmatrix}0.55 & 0.3 & 0.78\end{bmatrix}$, a view direction $\begin{bmatrix}0.87 & 0.22 & 0.44\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.7 & 1.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

971. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 0.7\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.55 & 0.2 & 0.81\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.23 & 0.37 & 0.9\end{bmatrix}$, and a view direction $\begin{bmatrix}0.11 & 0.59 & 0.8\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

972. Point p has a surface color of $\begin{bmatrix}1.0 & 1.2 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.6 & 0.01\end{bmatrix}$. Given a light of color $\begin{bmatrix}2.5 & 1.0 & 1.5\end{bmatrix}$ and direction $\begin{bmatrix}0.59 & 0.78 & 0.21\end{bmatrix}$, what will be the diffuse component of p's final color?

973. Point p has a surface color of $\begin{bmatrix}0.5 & 1.0 & 2.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.81 & 0.55 & 0.2\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.3 & 1.0 & 0.7\end{bmatrix}$ and direction $\begin{bmatrix}0.44 & 0.87 & 0.22\end{bmatrix}$, a view direction $\begin{bmatrix}0.21 & 0.59 & 0.78\end{bmatrix}$, and an ambient color $\begin{bmatrix}2.5 & 1.0 & 0.5\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

974. Point p has a surface color of $\begin{bmatrix}1.0 & 5.0 & 4.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.54 & 0.48 & 0.69\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.5 & 0.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.44 & 0.84 & 0.32\end{bmatrix}$, and a view direction

$\begin{bmatrix}0.69 & 0.48 & 0.54\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

975. What is the normal to a triangle defined by vertices $\begin{bmatrix}-5.0 & -4.0 & 4.0\end{bmatrix}$, $\begin{bmatrix}-3.0 & 0.0 & 1.0\end{bmatrix}$, and $\begin{bmatrix}1.0 & -2.0 & -4.0\end{bmatrix}$ (listed in the order of positive rotation)?

976. Point p has a surface color of $\begin{bmatrix}1.0 & 1.2 & 1.2\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.84 & 0.21 & 0.5\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.59 & 0.21\end{bmatrix}$, what will be the diffuse component of p's final color?

977. Given a point location of $\begin{bmatrix}3.0 & 0.0 & -4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}4.0 & -3.0 & -3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

978. Point p has a surface color of $\begin{bmatrix}5.0 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.22 & 0.68 & 0.7\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.2 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.4 & 0.78\end{bmatrix}$, a view direction $\begin{bmatrix}0.88 & 0.3 & 0.37\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 1.7\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

979. Point p has a surface color of $\begin{bmatrix}3.0 & 1.0 & 0.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.35 & 0.52\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.44 & 0.22 & 0.87\end{bmatrix}$, a view direction $\begin{bmatrix}0.37 & 0.9 & 0.23\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.2 & 0.2 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

980. Given a point location of $\begin{bmatrix}-4.0 & -2.0 & -4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}0.0 & -1.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

981. Point p has a surface color of $\begin{bmatrix}1.0 & 2.5 & 2.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.7 & 0.68 & 0.22\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 0.2 & 0.2\end{bmatrix}$ and direction $\begin{bmatrix}0.84 & 0.44 & 0.32\end{bmatrix}$, a view direction $\begin{bmatrix}0.78 & 0.4 & 0.48\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.2 & 1.0 & 0.8\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

982. Point p has a surface color of $\begin{bmatrix}1.0 & 3.0 & 3.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.54 & 0.48 & 0.69\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.8 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.78 & 0.59 & 0.21\end{bmatrix}$, a view direction $\begin{bmatrix}0.8 & 0.0 & 0.6\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 4.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

983. Point p has a surface color of $\begin{bmatrix}0.3 & 0.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.88 & 0.37 & 0.3\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.37 & 0.23 & 0.9\end{bmatrix}$, what will be the diffuse component of p's final color?

984. Point p has a surface color of $\begin{bmatrix}0.0 & 0.3 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.44 & 0.84 & 0.32\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.5 & 1.0 & 0.5\end{bmatrix}$ and direction $\begin{bmatrix}0.21 & 0.84 & 0.5\end{bmatrix}$, and a view direction $\begin{bmatrix}0.48 & 0.54 & 0.69\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

985. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.3 & 0.78 & 0.55\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.2 & 1.2 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.2 & 0.58 & 0.79\end{bmatrix}$, and a view direction $\begin{bmatrix}0.78 & 0.21 & 0.59\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

986. What is the normal to a triangle defined by vertices $\begin{bmatrix}-2.0 & -5.0 & -1.0\end{bmatrix}$, $\begin{bmatrix}-3.0 & 1.0 & 0.0\end{bmatrix}$, and $\begin{bmatrix}0.0 & 0.0 & 0.0\end{bmatrix}$ (listed in the order of positive rotation)?

987. Point p has a surface color of $\begin{bmatrix}0.8 & 1.0 & 0.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.8 & 0.6 & 0.0\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.5 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.37 & 0.88 & 0.3\end{bmatrix}$, a view direction $\begin{bmatrix}0.9 & 0.37 & 0.23\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 0.8\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

988. Point p has a surface color of $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.6 & 0.68 & 0.42\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.7 & 1.7 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.6 & 0.42 & 0.68\end{bmatrix}$, a view direction $\begin{bmatrix}0.58 & 0.61 & 0.54\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.7 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

989. Point p has a surface color of $\begin{bmatrix}2.0 & 4.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.77 & 0.42 & 0.48\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.2\end{bmatrix}$ and direction $\begin{bmatrix}0.3 & 0.55 & 0.78\end{bmatrix}$, a view direction $\begin{bmatrix}0.84 & 0.32 & 0.44\end{bmatrix}$, and an ambient color $\begin{bmatrix}0.2 & 1.2 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

990. What is the normal to a triangle defined by vertices $\begin{bmatrix}-3.0 & 2.0 & -3.0\end{bmatrix}$, $\begin{bmatrix}-4.0 & -4.0 & 3.0\end{bmatrix}$, and $\begin{bmatrix}2.0 & 2.0 & 1.0\end{bmatrix}$ (listed in the order of positive rotation)?

991. Point p has a surface color of $\begin{bmatrix}0.2 & 0.2 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.78 & 0.35 & 0.52\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.48 & 0.69 & 0.54\end{bmatrix}$, what will be the diffuse component of p's final color?

992. Given a point location of $\begin{bmatrix}2.0 & 2.0 & 1.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-3.0 & 2.0 & -4.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

993. Given a point location of $\begin{bmatrix}0.0 & 2.0 & -5.0\end{bmatrix}$ and a light location of $\begin{bmatrix}1.0 & -4.0 & 3.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

994. What is the normal to a triangle defined by vertices $\begin{bmatrix}-4.0 & 2.0 & -4.0\end{bmatrix}$, $\begin{bmatrix}-1.0 & 2.0 & -2.0\end{bmatrix}$, and $\begin{bmatrix}1.0 & -5.0 & 3.0\end{bmatrix}$ (listed in the order of positive rotation)?

995. Given a point location of $\begin{bmatrix}-5.0 & 4.0 & 4.0\end{bmatrix}$ and a light location of $\begin{bmatrix}-4.0 & -5.0 & 2.0\end{bmatrix}$, what is the light direction? (Remember to normalize.)

996. Point p has a surface color of $\begin{bmatrix}4.0 & 1.0 & 5.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.6 & 0.42 & 0.68\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 1.0 & 0.3\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.59 & 0.11\end{bmatrix}$, a view direction $\begin{bmatrix}0.3 & 0.37 & 0.88\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 1.0\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

997. Point p has a surface color of $\begin{bmatrix}2.0 & 1.0 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.37 & 0.23 & 0.9\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.7 & 1.0 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.59 & 0.11\end{bmatrix}$, a view direction $\begin{bmatrix}0.8 & 0.01 & 0.6\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.0 & 0.2\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?

998. Point p has a surface color of $\begin{bmatrix}1.0 & 1.5 & 1.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.01 & 0.6 & 0.8\end{bmatrix}$. Given a light of color $\begin{bmatrix}1.0 & 2.5 & 0.0\end{bmatrix}$ and direction $\begin{bmatrix}0.8 & 0.6 & 0.0\end{bmatrix}$, what will be the diffuse component of p's final color?

999. Point p has a surface color of $\begin{bmatrix}1.0 & 2.5 & 2.5\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.9 & 0.23 & 0.37\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 1.3 & 1.0\end{bmatrix}$ and direction $\begin{bmatrix}0.37 & 0.3 & 0.88\end{bmatrix}$, and a view direction $\begin{bmatrix}0.59 & 0.8 & 0.11\end{bmatrix}$, what will be the specular component of p's final color, with a Phong exponent of 2?

1000. Point p has a surface color of $\begin{bmatrix}5.0 & 1.0 & 4.0\end{bmatrix}$ and a surface normal of $\begin{bmatrix}0.48 & 0.77 & 0.42\end{bmatrix}$. Given a light of color $\begin{bmatrix}0.0 & 1.0 & 3.0\end{bmatrix}$ and direction $\begin{bmatrix}0.42 & 0.48 & 0.77\end{bmatrix}$, a view direction $\begin{bmatrix}0.8 & 0.11 & 0.59\end{bmatrix}$, and an ambient color $\begin{bmatrix}1.0 & 1.3 & 1.7\end{bmatrix}$, what will be p's final color, with a Phong exponent of 2?