

1. Given a point location of $[3.0 \ -2.0 \ -4.0]$ and a light location of $[0.0 \ 2.0 \ 1.0]$, what is the light direction? (Remember to normalize.)
2. Point p has a surface color of $[0.0 \ 1.0 \ 0.5]$ and a surface normal of $[0.22 \ 0.44 \ 0.87]$. Given a light of color $[1.0 \ 0.0 \ 1.0]$ and direction $[0.48 \ 0.77 \ 0.42]$, what will be the diffuse component of p's final color?
3. What is the normal to a triangle defined by vertices $[-3.0 \ -5.0 \ 4.0]$, $[1.0 \ 2.0 \ -1.0]$, and $[-1.0 \ 0.0 \ 1.0]$ (listed in the order of positive rotation)?
4. Point p has a surface color of $[1.0 \ 1.0 \ 1.5]$ and a surface normal of $[0.55 \ 0.2 \ 0.81]$. Given a light of color $[4.0 \ 2.0 \ 1.0]$ and direction $[0.5 \ 0.84 \ 0.21]$, a view direction $[0.22 \ 0.7 \ 0.68]$, and an ambient color $[4.0 \ 1.0 \ 2.0]$, what will be p's final color, with a Phong exponent of 2?
5. Point p has a surface color of $[2.0 \ 0.0 \ 1.0]$ and a surface normal of $[0.23 \ 0.9 \ 0.37]$. Given a light of color $[1.0 \ 2.0 \ 2.0]$ and direction $[0.8 \ 0.11 \ 0.59]$, and a view direction $[0.9 \ 0.37 \ 0.23]$, what will be the specular component of p's final color, with a Phong exponent of 2?
6. Given a point location of $[-5.0 \ -1.0 \ 0.0]$ and a light location of $[-3.0 \ 2.0 \ -1.0]$, what is the light direction? (Remember to normalize.)
7. Point p has a surface color of $[1.0 \ 1.7 \ 0.7]$ and a surface normal of $[0.55 \ 0.81 \ 0.2]$. Given a light of color $[3.0 \ 0.0 \ 1.0]$ and direction $[0.37 \ 0.52 \ 0.77]$, a view direction $[0.21 \ 0.59 \ 0.78]$, and an ambient color $[1.0 \ 0.0 \ 2.5]$, what will be p's final color, with a Phong exponent of 2?
8. Point p has a surface color of $[1.0 \ 0.0 \ 1.0]$ and a surface normal of $[0.8 \ 0.11 \ 0.59]$. Given a light of color $[0.0 \ 1.0 \ 4.0]$ and direction $[0.59 \ 0.21 \ 0.78]$, a view direction $[0.59 \ 0.21 \ 0.78]$, and an ambient color $[0.5 \ 0.2 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
9. What is the normal to a triangle defined by vertices $[1.0 \ 0.0 \ 4.0]$, $[-5.0 \ -5.0 \ -1.0]$, and $[3.0 \ -3.0 \ 0.0]$ (listed in the order of positive rotation)?
10. Given a point location of $[-5.0 \ 0.0 \ 0.0]$ and a light location of $[-2.0 \ -2.0 \ -5.0]$, what is the light direction? (Remember to normalize.)
11. Point p has a surface color of $[1.7 \ 0.3 \ 1.0]$ and a surface normal of $[0.54 \ 0.58 \ 0.61]$. Given a light of color $[2.5 \ 2.0 \ 1.0]$ and direction $[0.52 \ 0.37 \ 0.77]$, a view direction $[0.9 \ 0.23 \ 0.37]$, and an ambient color $[1.0 \ 1.7 \ 0.0]$, what will be p's final color, with a Phong exponent of 2?
12. Given a point location of $[0.0 \ -2.0 \ -3.0]$ and a light location of $[-1.0 \ 4.0 \ -3.0]$, what is the light direction? (Remember to normalize.)
13. What is the normal to a triangle defined by vertices $[-2.0 \ -4.0 \ 0.0]$, $[3.0 \ -1.0 \ -2.0]$, and $[4.0 \ -5.0 \ 1.0]$ (listed in the order of positive rotation)?
14. Point p has a surface color of $[1.0 \ 0.0 \ 0.3]$ and a surface normal of $[0.37 \ 0.88 \ 0.3]$. Given a light of color $[1.0 \ 2.0 \ 1.0]$ and direction $[0.48 \ 0.77 \ 0.42]$, a view direction

- $[0.48 \ 0.78 \ 0.4]$, and an ambient color $[0.3 \ 0.7 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
15. Given a point location of $[-3.0 \ 4.0 \ 3.0]$ and a light location of $[-1.0 \ 4.0 \ 3.0]$, what is the light direction? (Remember to normalize.)
 16. Point p has a surface color of $[1.7 \ 0.7 \ 1.0]$ and a surface normal of $[0.42 \ 0.68 \ 0.6]$. Given a light of color $[0.2 \ 0.8 \ 1.0]$ and direction $[0.48 \ 0.4 \ 0.78]$, a view direction $[0.49 \ 0.65 \ 0.58]$, and an ambient color $[1.0 \ 3.0 \ 3.0]$, what will be p's final color, with a Phong exponent of 2?
 17. Given a point location of $[0.0 \ 2.0 \ 0.0]$ and a light location of $[3.0 \ 1.0 \ 3.0]$, what is the light direction? (Remember to normalize.)
 18. Point p has a surface color of $[1.0 \ 1.0 \ 0.7]$ and a surface normal of $[0.8 \ 0.6 \ 0.0]$. Given a light of color $[0.5 \ 1.0 \ 0.2]$ and direction $[0.48 \ 0.77 \ 0.42]$, a view direction $[0.84 \ 0.44 \ 0.32]$, and an ambient color $[0.5 \ 0.0 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
 19. Given a point location of $[4.0 \ 3.0 \ -5.0]$ and a light location of $[-2.0 \ 0.0 \ -2.0]$, what is the light direction? (Remember to normalize.)
 20. What is the normal to a triangle defined by vertices $[2.0 \ 1.0 \ 3.0]$, $[0.0 \ 3.0 \ -2.0]$, and $[4.0 \ -4.0 \ -4.0]$ (listed in the order of positive rotation)?
 21. Given a point location of $[-3.0 \ -1.0 \ -1.0]$ and a light location of $[-5.0 \ 1.0 \ -4.0]$, what is the light direction? (Remember to normalize.)
 22. Given a point location of $[-3.0 \ -4.0 \ -3.0]$ and a light location of $[-2.0 \ -3.0 \ 1.0]$, what is the light direction? (Remember to normalize.)
 23. Point p has a surface color of $[4.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.55 \ 0.2 \ 0.81]$. Given a light of color $[1.0 \ 1.0 \ 1.7]$ and direction $[0.42 \ 0.6 \ 0.68]$, what will be the diffuse component of p's final color?
 24. Point p has a surface color of $[0.0 \ 1.0 \ 2.0]$ and a surface normal of $[0.0 \ 0.8 \ 0.6]$. Given a light of color $[1.0 \ 3.0 \ 5.0]$ and direction $[0.48 \ 0.4 \ 0.78]$, a view direction $[0.59 \ 0.8 \ 0.11]$, and an ambient color $[1.0 \ 0.3 \ 1.3]$, what will be p's final color, with a Phong exponent of 2?
 25. Point p has a surface color of $[1.0 \ 4.0 \ 4.0]$ and a surface normal of $[0.11 \ 0.59 \ 0.8]$. Given a light of color $[5.0 \ 4.0 \ 1.0]$ and direction $[0.8 \ 0.6 \ 0.01]$, and a view direction $[0.88 \ 0.37 \ 0.3]$, 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 $[1.0 \ 1.7 \ 1.3]$ and a surface normal of $[0.65 \ 0.58 \ 0.49]$. Given a light of color $[1.2 \ 1.0 \ 1.0]$ and direction $[0.37 \ 0.3 \ 0.88]$, and a view direction $[0.4 \ 0.48 \ 0.78]$, what will be the specular component of p's final color, with a Phong exponent of 2?
 27. Given a point location of $[-2.0 \ -5.0 \ 1.0]$ and a light location of $[3.0 \ 3.0 \ 1.0]$, what is the light direction? (Remember to normalize.)

28. What is the normal to a triangle defined by vertices $[-1.0 \ 4.0 \ 0.0]$, $[-1.0 \ -3.0 \ -2.0]$, and $[3.0 \ -2.0 \ 4.0]$ (listed in the order of positive rotation)?
29. What is the normal to a triangle defined by vertices $[4.0 \ -1.0 \ -3.0]$, $[-1.0 \ 2.0 \ 0.0]$, and $[-3.0 \ 2.0 \ 4.0]$ (listed in the order of positive rotation)?
30. Point p has a surface color of $[1.0 \ 0.8 \ 0.5]$ and a surface normal of $[0.44 \ 0.22 \ 0.87]$. Given a light of color $[1.5 \ 1.0 \ 2.5]$ and direction $[0.5 \ 0.21 \ 0.84]$, a view direction $[0.69 \ 0.54 \ 0.48]$, and an ambient color $[0.8 \ 0.2 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
31. Given a point location of $[2.0 \ -2.0 \ 0.0]$ and a light location of $[4.0 \ -3.0 \ 3.0]$, what is the light direction? (Remember to normalize.)
32. Point p has a surface color of $[1.0 \ 5.0 \ 1.0]$ and a surface normal of $[0.21 \ 0.84 \ 0.5]$. Given a light of color $[4.0 \ 1.0 \ 1.0]$ and direction $[0.77 \ 0.48 \ 0.42]$, and a view direction $[0.42 \ 0.77 \ 0.48]$, what will be the specular component of p's final color, with a Phong exponent of 2?
33. Given a point location of $[-3.0 \ 1.0 \ -5.0]$ and a light location of $[3.0 \ 0.0 \ -2.0]$, what is the light direction? (Remember to normalize.)
34. Point p has a surface color of $[1.0 \ 5.0 \ 1.0]$ and a surface normal of $[0.77 \ 0.42 \ 0.48]$. Given a light of color $[1.0 \ 0.0 \ 1.7]$ and direction $[0.69 \ 0.54 \ 0.48]$, and a view direction $[0.54 \ 0.61 \ 0.58]$, 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 $[0.5 \ 1.0 \ 0.8]$ and a surface normal of $[0.6 \ 0.8 \ 0.01]$. Given a light of color $[1.0 \ 0.8 \ 1.0]$ and direction $[0.78 \ 0.3 \ 0.55]$, and a view direction $[0.68 \ 0.42 \ 0.6]$, 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 $[1.0 \ 0.5 \ 0.8]$ and a surface normal of $[0.59 \ 0.21 \ 0.78]$. Given a light of color $[2.5 \ 2.5 \ 1.0]$ and direction $[0.78 \ 0.21 \ 0.59]$, a view direction $[0.42 \ 0.6 \ 0.68]$, and an ambient color $[0.5 \ 0.0 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
37. What is the normal to a triangle defined by vertices $[-4.0 \ 3.0 \ 1.0]$, $[3.0 \ -5.0 \ 2.0]$, and $[-1.0 \ 3.0 \ -4.0]$ (listed in the order of positive rotation)?
38. Given a point location of $[-2.0 \ -2.0 \ 2.0]$ and a light location of $[1.0 \ -2.0 \ -3.0]$, what is the light direction? (Remember to normalize.)
39. Point p has a surface color of $[1.0 \ 3.0 \ 5.0]$ and a surface normal of $[0.9 \ 0.37 \ 0.23]$. Given a light of color $[1.0 \ 0.3 \ 1.0]$ and direction $[0.7 \ 0.22 \ 0.68]$, a view direction $[0.3 \ 0.78 \ 0.55]$, and an ambient color $[1.0 \ 1.0 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
40. Point p has a surface color of $[1.0 \ 2.0 \ 1.0]$ and a surface normal of $[0.78 \ 0.21 \ 0.59]$. Given a light of color $[0.5 \ 2.5 \ 1.0]$ and direction $[0.3 \ 0.55 \ 0.78]$, a view direction $[0.78 \ 0.4 \ 0.48]$, and an ambient color $[0.5 \ 1.0 \ 0.5]$, what will be p's final color, with a Phong exponent of 2?

41. Point p has a surface color of $[0.5 \ 0.5 \ 1.0]$ and a surface normal of $[0.0 \ 0.8 \ 0.6]$. Given a light of color $[0.5 \ 0.8 \ 1.0]$ and direction $[0.78 \ 0.52 \ 0.35]$, what will be the diffuse component of p 's final color?
42. Given a point location of $[-1.0 \ -2.0 \ -4.0]$ and a light location of $[2.0 \ 2.0 \ -4.0]$, what is the light direction? (Remember to normalize.)
43. What is the normal to a triangle defined by vertices $[1.0 \ -1.0 \ 1.0]$, $[0.0 \ -1.0 \ -2.0]$, and $[4.0 \ 1.0 \ 1.0]$ (listed in the order of positive rotation)?
44. Point p has a surface color of $[3.0 \ 1.0 \ 5.0]$ and a surface normal of $[0.42 \ 0.68 \ 0.6]$. Given a light of color $[0.7 \ 1.0 \ 0.7]$ and direction $[0.37 \ 0.9 \ 0.23]$, what will be the diffuse component of p 's final color?
45. Point p has a surface color of $[1.0 \ 0.0 \ 1.0]$ and a surface normal of $[0.37 \ 0.3 \ 0.88]$. Given a light of color $[2.0 \ 1.0 \ 0.0]$ and direction $[0.37 \ 0.3 \ 0.88]$, a view direction $[0.9 \ 0.37 \ 0.23]$, and an ambient color $[1.0 \ 1.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
46. Point p has a surface color of $[0.0 \ 0.3 \ 1.0]$ and a surface normal of $[0.4 \ 0.78 \ 0.48]$. Given a light of color $[1.5 \ 1.0 \ 1.5]$ and direction $[0.22 \ 0.68 \ 0.7]$, a view direction $[0.21 \ 0.5 \ 0.84]$, and an ambient color $[1.0 \ 1.0 \ 0.8]$, what will be p 's final color, with a Phong exponent of 2?
47. Given a point location of $[-4.0 \ -5.0 \ -3.0]$ and a light location of $[0.0 \ -5.0 \ -5.0]$, what is the light direction? (Remember to normalize.)
48. What is the normal to a triangle defined by vertices $[-4.0 \ 1.0 \ 4.0]$, $[1.0 \ -5.0 \ -2.0]$, and $[4.0 \ -5.0 \ -2.0]$ (listed in the order of positive rotation)?
49. Point p has a surface color of $[1.0 \ 0.5 \ 1.0]$ and a surface normal of $[0.44 \ 0.22 \ 0.87]$. Given a light of color $[1.0 \ 4.0 \ 5.0]$ and direction $[0.6 \ 0.8 \ 0.01]$, and a view direction $[0.55 \ 0.78 \ 0.3]$, 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 $[1.0 \ 0.2 \ 0.8]$ and a surface normal of $[0.54 \ 0.69 \ 0.48]$. Given a light of color $[1.0 \ 1.3 \ 0.0]$ and direction $[0.3 \ 0.88 \ 0.37]$, what will be the diffuse component of p 's final color?
51. Given a point location of $[-4.0 \ 0.0 \ 0.0]$ and a light location of $[1.0 \ 4.0 \ 4.0]$, what is the light direction? (Remember to normalize.)
52. Given a point location of $[1.0 \ 4.0 \ -4.0]$ and a light location of $[2.0 \ -1.0 \ 2.0]$, what is the light direction? (Remember to normalize.)
53. Point p has a surface color of $[1.0 \ 2.0 \ 1.0]$ and a surface normal of $[0.58 \ 0.61 \ 0.54]$. Given a light of color $[1.3 \ 1.0 \ 1.0]$ and direction $[0.68 \ 0.7 \ 0.22]$, what will be the diffuse component of p 's final color?
54. Given a point location of $[-4.0 \ 0.0 \ -1.0]$ and a light location of $[2.0 \ 2.0 \ 4.0]$, what is the light direction? (Remember to normalize.)

55. Given a point location of $[-5.0 \ 1.0 \ -5.0]$ and a light location of $[-1.0 \ -3.0 \ 1.0]$, what is the light direction? (Remember to normalize.)
56. Point p has a surface color of $[1.0 \ 0.0 \ 1.0]$ and a surface normal of $[0.49 \ 0.65 \ 0.58]$. Given a light of color $[1.0 \ 1.5 \ 1.0]$ and direction $[0.22 \ 0.87 \ 0.44]$, a view direction $[0.3 \ 0.88 \ 0.37]$, and an ambient color $[0.2 \ 1.0 \ 0.5]$, what will be p's final color, with a Phong exponent of 2?
57. Given a point location of $[-1.0 \ -4.0 \ 0.0]$ and a light location of $[1.0 \ -1.0 \ -5.0]$, what is the light direction? (Remember to normalize.)
58. Point p has a surface color of $[1.0 \ 0.3 \ 1.0]$ and a surface normal of $[0.65 \ 0.58 \ 0.49]$. Given a light of color $[1.3 \ 1.0 \ 1.3]$ and direction $[0.59 \ 0.78 \ 0.21]$, a view direction $[0.8 \ 0.59 \ 0.11]$, and an ambient color $[0.0 \ 1.0 \ 0.5]$, what will be p's final color, with a Phong exponent of 2?
59. Given a point location of $[3.0 \ -5.0 \ -1.0]$ and a light location of $[4.0 \ 4.0 \ -2.0]$, what is the light direction? (Remember to normalize.)
60. Point p has a surface color of $[4.0 \ 1.0 \ 3.0]$ and a surface normal of $[0.2 \ 0.81 \ 0.55]$. Given a light of color $[1.0 \ 2.5 \ 2.0]$ and direction $[0.69 \ 0.54 \ 0.48]$, what will be the diffuse component of p's final color?
61. What is the normal to a triangle defined by vertices $[2.0 \ -4.0 \ 0.0]$, $[-4.0 \ -2.0 \ -5.0]$, and $[-1.0 \ -4.0 \ 4.0]$ (listed in the order of positive rotation)?
62. Point p has a surface color of $[1.0 \ 0.8 \ 0.2]$ and a surface normal of $[0.7 \ 0.22 \ 0.68]$. Given a light of color $[0.0 \ 2.5 \ 1.0]$ and direction $[0.78 \ 0.59 \ 0.21]$, a view direction $[0.8 \ 0.6 \ 0.01]$, and an ambient color $[1.3 \ 0.0 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
63. Given a point location of $[1.0 \ 1.0 \ 2.0]$ and a light location of $[-1.0 \ 4.0 \ -4.0]$, what is the light direction? (Remember to normalize.)
64. Given a point location of $[1.0 \ 3.0 \ -3.0]$ and a light location of $[-3.0 \ -5.0 \ 2.0]$, what is the light direction? (Remember to normalize.)
65. What is the normal to a triangle defined by vertices $[-4.0 \ 2.0 \ 2.0]$, $[-5.0 \ -3.0 \ -1.0]$, and $[-5.0 \ -2.0 \ -4.0]$ (listed in the order of positive rotation)?
66. Point p has a surface color of $[0.7 \ 1.0 \ 0.3]$ and a surface normal of $[0.21 \ 0.84 \ 0.5]$. Given a light of color $[0.5 \ 1.0 \ 1.0]$ and direction $[0.7 \ 0.68 \ 0.22]$, and a view direction $[0.7 \ 0.22 \ 0.68]$, what will be the specular component of p's final color, with a Phong exponent of 2?
67. Given a point location of $[-1.0 \ -2.0 \ 3.0]$ and a light location of $[-4.0 \ 0.0 \ 0.0]$, what is the light direction? (Remember to normalize.)
68. What is the normal to a triangle defined by vertices $[1.0 \ 0.0 \ 2.0]$, $[0.0 \ -5.0 \ 3.0]$, and $[3.0 \ 0.0 \ -1.0]$ (listed in the order of positive rotation)?

69. Point p has a surface color of $[0.7 \ 1.0 \ 1.7]$ and a surface normal of $[0.78 \ 0.52 \ 0.35]$. Given a light of color $[1.0 \ 1.0 \ 0.2]$ and direction $[0.52 \ 0.78 \ 0.35]$, and a view direction $[0.6 \ 0.68 \ 0.42]$, 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 $[1.0 \ 0.2 \ 0.2]$ and a surface normal of $[0.58 \ 0.2 \ 0.79]$. Given a light of color $[2.0 \ 1.0 \ 2.0]$ and direction $[0.01 \ 0.6 \ 0.8]$, and a view direction $[0.49 \ 0.58 \ 0.65]$, 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 $[-4.0 \ -2.0 \ 4.0]$, $[3.0 \ -3.0 \ -2.0]$, and $[-1.0 \ 2.0 \ 0.0]$ (listed in the order of positive rotation)?
72. Point p has a surface color of $[1.0 \ 1.0 \ 2.5]$ and a surface normal of $[0.23 \ 0.37 \ 0.9]$. Given a light of color $[1.0 \ 1.0 \ 0.2]$ and direction $[0.77 \ 0.52 \ 0.37]$, a view direction $[0.6 \ 0.0 \ 0.8]$, and an ambient color $[0.7 \ 1.0 \ 0.0]$, what will be p 's final color, with a Phong exponent of 2?
73. What is the normal to a triangle defined by vertices $[-5.0 \ -2.0 \ 0.0]$, $[-2.0 \ 0.0 \ -4.0]$, and $[-3.0 \ 3.0 \ 4.0]$ (listed in the order of positive rotation)?
74. Point p has a surface color of $[1.0 \ 1.0 \ 0.0]$ and a surface normal of $[0.78 \ 0.55 \ 0.3]$. Given a light of color $[5.0 \ 2.0 \ 1.0]$ and direction $[0.58 \ 0.54 \ 0.61]$, a view direction $[0.37 \ 0.3 \ 0.88]$, and an ambient color $[0.2 \ 1.0 \ 0.2]$, what will be p 's final color, with a Phong exponent of 2?
75. Point p has a surface color of $[4.0 \ 1.0 \ 3.0]$ and a surface normal of $[0.48 \ 0.54 \ 0.69]$. Given a light of color $[2.0 \ 4.0 \ 1.0]$ and direction $[0.52 \ 0.37 \ 0.77]$, a view direction $[0.78 \ 0.55 \ 0.3]$, and an ambient color $[0.2 \ 1.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
76. Given a point location of $[3.0 \ -5.0 \ -4.0]$ and a light location of $[-5.0 \ -4.0 \ -2.0]$, what is the light direction? (Remember to normalize.)
77. Given a point location of $[-5.0 \ 3.0 \ -4.0]$ and a light location of $[-5.0 \ -1.0 \ 3.0]$, what is the light direction? (Remember to normalize.)
78. Point p has a surface color of $[3.0 \ 5.0 \ 1.0]$ and a surface normal of $[0.58 \ 0.2 \ 0.79]$. Given a light of color $[1.0 \ 0.0 \ 0.7]$ and direction $[0.01 \ 0.8 \ 0.6]$, what will be the diffuse component of p 's final color?
79. Given a point location of $[-4.0 \ 4.0 \ -2.0]$ and a light location of $[3.0 \ -2.0 \ -5.0]$, what is the light direction? (Remember to normalize.)
80. Point p has a surface color of $[4.0 \ 1.0 \ 0.0]$ and a surface normal of $[0.84 \ 0.32 \ 0.44]$. Given a light of color $[0.8 \ 1.0 \ 1.0]$ and direction $[0.88 \ 0.37 \ 0.3]$, and a view direction $[0.37 \ 0.9 \ 0.23]$, what will be the specular component of p 's final color, with a Phong exponent of 2?
81. Given a point location of $[-1.0 \ 2.0 \ 2.0]$ and a light location of $[-5.0 \ -5.0 \ -1.0]$, what is the light direction? (Remember to normalize.)

82. What is the normal to a triangle defined by vertices $[4.0 \ -5.0 \ -3.0]$, $[0.0 \ -4.0 \ -1.0]$, and $[-2.0 \ 0.0 \ -3.0]$ (listed in the order of positive rotation)?
83. Point p has a surface color of $[2.0 \ 4.0 \ 1.0]$ and a surface normal of $[0.78 \ 0.55 \ 0.3]$. Given a light of color $[1.0 \ 1.0 \ 4.0]$ and direction $[0.87 \ 0.44 \ 0.22]$, what will be the diffuse component of p's final color?
84. What is the normal to a triangle defined by vertices $[-5.0 \ 1.0 \ 0.0]$, $[-4.0 \ 0.0 \ 4.0]$, and $[0.0 \ 2.0 \ 3.0]$ (listed in the order of positive rotation)?
85. What is the normal to a triangle defined by vertices $[1.0 \ 4.0 \ -5.0]$, $[-3.0 \ 1.0 \ 2.0]$, and $[3.0 \ 4.0 \ 2.0]$ (listed in the order of positive rotation)?
86. Point p has a surface color of $[0.8 \ 1.2 \ 1.0]$ and a surface normal of $[0.01 \ 0.8 \ 0.6]$. Given a light of color $[0.2 \ 0.8 \ 1.0]$ and direction $[0.88 \ 0.3 \ 0.37]$, a view direction $[0.78 \ 0.3 \ 0.55]$, and an ambient color $[0.0 \ 1.0 \ 5.0]$, what will be p's final color, with a Phong exponent of 2?
87. Point p has a surface color of $[1.0 \ 0.5 \ 2.0]$ and a surface normal of $[0.58 \ 0.2 \ 0.79]$. Given a light of color $[1.0 \ 0.5 \ 0.5]$ and direction $[0.21 \ 0.84 \ 0.5]$, and a view direction $[0.2 \ 0.58 \ 0.79]$, 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 $[1.0 \ 0.0 \ 0.5]$ and a surface normal of $[0.69 \ 0.54 \ 0.48]$. Given a light of color $[0.0 \ 2.0 \ 1.0]$ and direction $[0.77 \ 0.37 \ 0.52]$, and a view direction $[0.58 \ 0.79 \ 0.2]$, 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 $[0.0 \ 1.2 \ 1.0]$ and a surface normal of $[0.37 \ 0.77 \ 0.52]$. Given a light of color $[1.0 \ 1.0 \ 0.5]$ and direction $[0.81 \ 0.55 \ 0.2]$, a view direction $[0.65 \ 0.58 \ 0.49]$, and an ambient color $[1.3 \ 1.0 \ 1.3]$, what will be p's final color, with a Phong exponent of 2?
90. Point p has a surface color of $[1.0 \ 1.5 \ 0.5]$ and a surface normal of $[0.65 \ 0.58 \ 0.49]$. Given a light of color $[5.0 \ 1.0 \ 5.0]$ and direction $[0.21 \ 0.5 \ 0.84]$, a view direction $[0.81 \ 0.2 \ 0.55]$, and an ambient color $[0.0 \ 1.0 \ 0.3]$, what will be p's final color, with a Phong exponent of 2?
91. Point p has a surface color of $[1.0 \ 0.0 \ 3.0]$ and a surface normal of $[0.59 \ 0.8 \ 0.11]$. Given a light of color $[1.0 \ 1.0 \ 1.7]$ and direction $[0.77 \ 0.48 \ 0.42]$, what will be the diffuse component of p's final color?
92. Point p has a surface color of $[1.0 \ 1.2 \ 1.0]$ and a surface normal of $[0.84 \ 0.5 \ 0.21]$. Given a light of color $[0.0 \ 1.0 \ 2.0]$ and direction $[0.4 \ 0.48 \ 0.78]$, a view direction $[0.58 \ 0.79 \ 0.2]$, and an ambient color $[0.2 \ 0.2 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
93. Point p has a surface color of $[2.0 \ 3.0 \ 1.0]$ and a surface normal of $[0.58 \ 0.2 \ 0.79]$. Given a light of color $[1.0 \ 1.0 \ 1.2]$ and direction $[0.22 \ 0.44 \ 0.87]$, and a view direction $[0.55 \ 0.3 \ 0.78]$, 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 $[1.0 \ 0.0 \ 0.0]$ and a surface normal of $[0.68 \ 0.7 \ 0.22]$. Given a light of color $[1.0 \ 1.0 \ 2.0]$ and direction $[0.35 \ 0.52 \ 0.78]$, what will be the diffuse component of p 's final color?
95. Point p has a surface color of $[1.0 \ 0.7 \ 0.7]$ and a surface normal of $[0.79 \ 0.58 \ 0.2]$. Given a light of color $[0.3 \ 1.0 \ 1.3]$ and direction $[0.8 \ 0.6 \ 0.01]$, a view direction $[0.84 \ 0.32 \ 0.44]$, and an ambient color $[3.0 \ 1.0 \ 5.0]$, what will be p 's final color, with a Phong exponent of 2?
96. What is the normal to a triangle defined by vertices $[-2.0 \ 0.0 \ -2.0]$, $[0.0 \ 4.0 \ -5.0]$, and $[-4.0 \ -3.0 \ 2.0]$ (listed in the order of positive rotation)?
97. Point p has a surface color of $[0.3 \ 0.7 \ 1.0]$ and a surface normal of $[0.48 \ 0.42 \ 0.77]$. Given a light of color $[1.0 \ 1.0 \ 0.2]$ and direction $[0.35 \ 0.78 \ 0.52]$, and a view direction $[0.58 \ 0.79 \ 0.2]$, what will be the specular component of p 's final color, with a Phong exponent of 2?
98. Given a point location of $[-2.0 \ 0.0 \ 1.0]$ and a light location of $[-5.0 \ 4.0 \ 0.0]$, what is the light direction? (Remember to normalize.)
99. Point p has a surface color of $[2.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.37 \ 0.88 \ 0.3]$. Given a light of color $[1.0 \ 0.5 \ 1.0]$ and direction $[0.6 \ 0.8 \ 0.01]$, a view direction $[0.59 \ 0.8 \ 0.11]$, and an ambient color $[1.0 \ 0.5 \ 0.8]$, what will be p 's final color, with a Phong exponent of 2?
100. Given a point location of $[-5.0 \ -3.0 \ 2.0]$ and a light location of $[-5.0 \ -3.0 \ -1.0]$, what is the light direction? (Remember to normalize.)
101. What is the normal to a triangle defined by vertices $[4.0 \ -1.0 \ 3.0]$, $[1.0 \ -4.0 \ -3.0]$, and $[-2.0 \ -1.0 \ 3.0]$ (listed in the order of positive rotation)?
102. Point p has a surface color of $[1.0 \ 2.0 \ 1.0]$ and a surface normal of $[0.48 \ 0.69 \ 0.54]$. Given a light of color $[1.0 \ 0.5 \ 1.0]$ and direction $[0.59 \ 0.78 \ 0.21]$, and a view direction $[0.87 \ 0.44 \ 0.22]$, 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 $[5.0 \ 4.0 \ 1.0]$ and a surface normal of $[0.58 \ 0.54 \ 0.61]$. Given a light of color $[1.0 \ 1.2 \ 0.8]$ and direction $[0.79 \ 0.2 \ 0.58]$, what will be the diffuse component of p 's final color?
104. Point p has a surface color of $[1.0 \ 1.7 \ 0.7]$ and a surface normal of $[0.55 \ 0.78 \ 0.3]$. Given a light of color $[1.0 \ 5.0 \ 0.0]$ and direction $[0.88 \ 0.37 \ 0.3]$, and a view direction $[0.22 \ 0.68 \ 0.7]$, 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 $[-3.0 \ -5.0 \ 1.0]$, $[0.0 \ -2.0 \ 1.0]$, and $[-5.0 \ -3.0 \ -2.0]$ (listed in the order of positive rotation)?
106. Point p has a surface color of $[0.8 \ 1.0 \ 0.2]$ and a surface normal of $[0.6 \ 0.8 \ 0.01]$. Given a light of color $[0.7 \ 0.3 \ 1.0]$ and direction $[0.5 \ 0.84 \ 0.21]$, what will be the diffuse component of p 's final color?

107. What is the normal to a triangle defined by vertices $[2.0 \ 4.0 \ -5.0]$, $[3.0 \ 4.0 \ 0.0]$, and $[-2.0 \ -3.0 \ 2.0]$ (listed in the order of positive rotation)?
108. Point p has a surface color of $[0.0 \ 1.0 \ 5.0]$ and a surface normal of $[0.65 \ 0.58 \ 0.49]$. Given a light of color $[0.3 \ 1.0 \ 0.3]$ and direction $[0.68 \ 0.7 \ 0.22]$, a view direction $[0.68 \ 0.22 \ 0.7]$, and an ambient color $[0.3 \ 0.7 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
109. Point p has a surface color of $[0.3 \ 1.0 \ 0.7]$ and a surface normal of $[0.68 \ 0.42 \ 0.6]$. Given a light of color $[4.0 \ 1.0 \ 0.0]$ and direction $[0.58 \ 0.49 \ 0.65]$, a view direction $[0.23 \ 0.9 \ 0.37]$, and an ambient color $[1.3 \ 1.0 \ 1.7]$, what will be p's final color, with a Phong exponent of 2?
110. Point p has a surface color of $[1.0 \ 2.5 \ 1.0]$ and a surface normal of $[0.23 \ 0.9 \ 0.37]$. Given a light of color $[1.0 \ 0.0 \ 0.7]$ and direction $[0.0 \ 0.8 \ 0.6]$, a view direction $[0.87 \ 0.22 \ 0.44]$, and an ambient color $[0.8 \ 1.0 \ 0.0]$, what will be p's final color, with a Phong exponent of 2?
111. What is the normal to a triangle defined by vertices $[-1.0 \ -4.0 \ -3.0]$, $[-1.0 \ -2.0 \ 2.0]$, and $[1.0 \ -4.0 \ 2.0]$ (listed in the order of positive rotation)?
112. Point p has a surface color of $[1.0 \ 0.0 \ 0.8]$ and a surface normal of $[0.54 \ 0.58 \ 0.61]$. Given a light of color $[1.0 \ 5.0 \ 5.0]$ and direction $[0.87 \ 0.22 \ 0.44]$, and a view direction $[0.2 \ 0.81 \ 0.55]$, 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 $[-2.0 \ 4.0 \ -1.0]$, $[1.0 \ 0.0 \ -4.0]$, and $[-5.0 \ 4.0 \ -5.0]$ (listed in the order of positive rotation)?
114. Point p has a surface color of $[1.0 \ 1.0 \ 3.0]$ and a surface normal of $[0.58 \ 0.2 \ 0.79]$. Given a light of color $[0.8 \ 0.2 \ 1.0]$ and direction $[0.6 \ 0.01 \ 0.8]$, what will be the diffuse component of p's final color?
115. Given a point location of $[-1.0 \ 2.0 \ 2.0]$ and a light location of $[0.0 \ 4.0 \ -4.0]$, what is the light direction? (Remember to normalize.)
116. What is the normal to a triangle defined by vertices $[-5.0 \ 4.0 \ 1.0]$, $[2.0 \ 4.0 \ -1.0]$, and $[-2.0 \ 2.0 \ 3.0]$ (listed in the order of positive rotation)?
117. Point p has a surface color of $[1.0 \ 0.2 \ 0.8]$ and a surface normal of $[0.52 \ 0.37 \ 0.77]$. Given a light of color $[0.8 \ 0.8 \ 1.0]$ and direction $[0.44 \ 0.84 \ 0.32]$, and a view direction $[0.69 \ 0.48 \ 0.54]$, 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 $[-1.0 \ 4.0 \ 1.0]$, $[0.0 \ 0.0 \ -5.0]$, and $[2.0 \ -1.0 \ -2.0]$ (listed in the order of positive rotation)?
119. Point p has a surface color of $[5.0 \ 1.0 \ 2.0]$ and a surface normal of $[0.54 \ 0.69 \ 0.48]$. Given a light of color $[1.0 \ 0.5 \ 2.0]$ and direction $[0.01 \ 0.6 \ 0.8]$, a view direction $[0.42 \ 0.77 \ 0.48]$, and an ambient color $[1.7 \ 0.3 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?

120. Point p has a surface color of $[1.3 \ 1.7 \ 1.0]$ and a surface normal of $[0.78 \ 0.59 \ 0.21]$. Given a light of color $[1.0 \ 1.2 \ 1.0]$ and direction $[0.48 \ 0.77 \ 0.42]$, what will be the diffuse component of p 's final color?
121. Given a point location of $[-3.0 \ -3.0 \ 3.0]$ and a light location of $[-4.0 \ 3.0 \ 0.0]$, what is the light direction? (Remember to normalize.)
122. Given a point location of $[1.0 \ -2.0 \ 3.0]$ and a light location of $[2.0 \ 1.0 \ -5.0]$, what is the light direction? (Remember to normalize.)
123. What is the normal to a triangle defined by vertices $[0.0 \ -3.0 \ 0.0]$, $[2.0 \ -2.0 \ -3.0]$, and $[3.0 \ -3.0 \ -2.0]$ (listed in the order of positive rotation)?
124. Given a point location of $[-5.0 \ 0.0 \ -3.0]$ and a light location of $[0.0 \ -2.0 \ 0.0]$, what is the light direction? (Remember to normalize.)
125. What is the normal to a triangle defined by vertices $[1.0 \ -1.0 \ 3.0]$, $[-5.0 \ 3.0 \ -5.0]$, and $[-5.0 \ -3.0 \ -4.0]$ (listed in the order of positive rotation)?
126. Point p has a surface color of $[1.0 \ 0.7 \ 0.3]$ and a surface normal of $[0.7 \ 0.68 \ 0.22]$. Given a light of color $[0.5 \ 1.0 \ 1.0]$ and direction $[0.7 \ 0.22 \ 0.68]$, what will be the diffuse component of p 's final color?
127. What is the normal to a triangle defined by vertices $[0.0 \ 2.0 \ -3.0]$, $[4.0 \ -1.0 \ -5.0]$, and $[2.0 \ -3.0 \ -4.0]$ (listed in the order of positive rotation)?
128. Given a point location of $[-1.0 \ -1.0 \ 1.0]$ and a light location of $[4.0 \ -4.0 \ 3.0]$, what is the light direction? (Remember to normalize.)
129. Point p has a surface color of $[1.7 \ 1.3 \ 1.0]$ and a surface normal of $[0.32 \ 0.84 \ 0.44]$. Given a light of color $[0.3 \ 1.0 \ 0.7]$ and direction $[0.4 \ 0.48 \ 0.78]$, what will be the diffuse component of p 's final color?
130. Given a point location of $[0.0 \ 1.0 \ 0.0]$ and a light location of $[3.0 \ -1.0 \ -5.0]$, what is the light direction? (Remember to normalize.)
131. What is the normal to a triangle defined by vertices $[-5.0 \ -4.0 \ 2.0]$, $[-5.0 \ -1.0 \ 0.0]$, and $[-1.0 \ -2.0 \ -3.0]$ (listed in the order of positive rotation)?
132. What is the normal to a triangle defined by vertices $[4.0 \ 1.0 \ -4.0]$, $[3.0 \ 2.0 \ 4.0]$, and $[-2.0 \ -5.0 \ -2.0]$ (listed in the order of positive rotation)?
133. Point p has a surface color of $[0.2 \ 1.0 \ 1.2]$ and a surface normal of $[0.6 \ 0.01 \ 0.8]$. Given a light of color $[1.0 \ 2.5 \ 1.0]$ and direction $[0.68 \ 0.22 \ 0.7]$, what will be the diffuse component of p 's final color?
134. Point p has a surface color of $[1.0 \ 5.0 \ 1.0]$ and a surface normal of $[0.21 \ 0.78 \ 0.59]$. Given a light of color $[0.0 \ 1.7 \ 1.0]$ and direction $[0.55 \ 0.3 \ 0.78]$, and a view direction $[0.6 \ 0.68 \ 0.42]$, what will be the specular component of p 's final color, with a Phong exponent of 2?
135. Given a point location of $[-3.0 \ -3.0 \ -5.0]$ and a light location of $[1.0 \ -1.0 \ -4.0]$, what is the light direction? (Remember to normalize.)

136. Point p has a surface color of $[1.0 \ 1.0 \ 0.0]$ and a surface normal of $[0.0 \ 0.8 \ 0.6]$. Given a light of color $[0.0 \ 0.7 \ 1.0]$ and direction $[0.4 \ 0.78 \ 0.48]$, and a view direction $[0.3 \ 0.88 \ 0.37]$, what will be the specular component of p 's final color, with a Phong exponent of 2?
137. Given a point location of $[1.0 \ 3.0 \ -2.0]$ and a light location of $[2.0 \ -1.0 \ -4.0]$, what is the light direction? (Remember to normalize.)
138. Point p has a surface color of $[1.0 \ 3.0 \ 1.0]$ and a surface normal of $[0.42 \ 0.77 \ 0.48]$. Given a light of color $[1.0 \ 1.0 \ 0.3]$ and direction $[0.22 \ 0.68 \ 0.7]$, and a view direction $[0.79 \ 0.2 \ 0.58]$, what will be the specular component of p 's final color, with a Phong exponent of 2?
139. Given a point location of $[-4.0 \ -3.0 \ 0.0]$ and a light location of $[-1.0 \ -1.0 \ 4.0]$, what is the light direction? (Remember to normalize.)
140. Point p has a surface color of $[1.7 \ 1.0 \ 1.0]$ and a surface normal of $[0.9 \ 0.37 \ 0.23]$. Given a light of color $[1.0 \ 0.7 \ 1.0]$ and direction $[0.52 \ 0.77 \ 0.37]$, a view direction $[0.78 \ 0.21 \ 0.59]$, and an ambient color $[5.0 \ 1.0 \ 4.0]$, what will be p 's final color, with a Phong exponent of 2?
141. Point p has a surface color of $[1.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.52 \ 0.35 \ 0.78]$. Given a light of color $[0.0 \ 1.7 \ 1.0]$ and direction $[0.78 \ 0.52 \ 0.35]$, and a view direction $[0.78 \ 0.21 \ 0.59]$, 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 $[2.5 \ 0.5 \ 1.0]$ and a surface normal of $[0.21 \ 0.84 \ 0.5]$. Given a light of color $[0.0 \ 1.0 \ 2.0]$ and direction $[0.35 \ 0.78 \ 0.52]$, a view direction $[0.77 \ 0.52 \ 0.37]$, and an ambient color $[0.0 \ 1.0 \ 0.8]$, what will be p 's final color, with a Phong exponent of 2?
143. Given a point location of $[-2.0 \ -3.0 \ 4.0]$ and a light location of $[-1.0 \ 1.0 \ -3.0]$, what is the light direction? (Remember to normalize.)
144. Point p has a surface color of $[1.3 \ 1.0 \ 0.7]$ and a surface normal of $[0.87 \ 0.44 \ 0.22]$. Given a light of color $[1.0 \ 2.0 \ 0.5]$ and direction $[0.42 \ 0.48 \ 0.77]$, and a view direction $[0.52 \ 0.37 \ 0.77]$, what will be the specular component of p 's final color, with a Phong exponent of 2?
145. Given a point location of $[4.0 \ -4.0 \ -5.0]$ and a light location of $[4.0 \ -3.0 \ -4.0]$, what is the light direction? (Remember to normalize.)
146. Given a point location of $[1.0 \ -4.0 \ 2.0]$ and a light location of $[-2.0 \ 0.0 \ 4.0]$, what is the light direction? (Remember to normalize.)
147. Point p has a surface color of $[1.2 \ 0.2 \ 1.0]$ and a surface normal of $[0.8 \ 0.0 \ 0.6]$. Given a light of color $[3.0 \ 1.0 \ 4.0]$ and direction $[0.37 \ 0.77 \ 0.52]$, what will be the diffuse component of p 's final color?
148. Point p has a surface color of $[1.0 \ 0.0 \ 4.0]$ and a surface normal of $[0.84 \ 0.44 \ 0.32]$. Given a light of color $[1.3 \ 0.3 \ 1.0]$ and direction $[0.3 \ 0.37 \ 0.88]$, what will be the diffuse component of p 's final color?

149. Point p has a surface color of $[1.0 \ 0.8 \ 0.8]$ and a surface normal of $[0.42 \ 0.68 \ 0.6]$. Given a light of color $[5.0 \ 1.0 \ 3.0]$ and direction $[0.35 \ 0.52 \ 0.78]$, what will be the diffuse component of p's final color?
150. What is the normal to a triangle defined by vertices $[3.0 \ -4.0 \ -4.0]$, $[0.0 \ -2.0 \ 4.0]$, and $[-4.0 \ -3.0 \ -1.0]$ (listed in the order of positive rotation)?
151. Point p has a surface color of $[0.2 \ 1.0 \ 1.2]$ and a surface normal of $[0.48 \ 0.78 \ 0.4]$. Given a light of color $[1.0 \ 1.0 \ 1.0]$ and direction $[0.55 \ 0.78 \ 0.3]$, and a view direction $[0.22 \ 0.7 \ 0.68]$, 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 $[2.0 \ 3.0 \ 1.0]$ and a surface normal of $[0.8 \ 0.6 \ 0.01]$. Given a light of color $[5.0 \ 3.0 \ 1.0]$ and direction $[0.49 \ 0.65 \ 0.58]$, what will be the diffuse component of p's final color?
153. Given a point location of $[-4.0 \ 2.0 \ 0.0]$ and a light location of $[-4.0 \ -1.0 \ -4.0]$, what is the light direction? (Remember to normalize.)
154. What is the normal to a triangle defined by vertices $[1.0 \ -3.0 \ 2.0]$, $[-5.0 \ -2.0 \ -3.0]$, and $[-3.0 \ 2.0 \ -4.0]$ (listed in the order of positive rotation)?
155. Point p has a surface color of $[0.7 \ 1.0 \ 1.0]$ and a surface normal of $[0.6 \ 0.68 \ 0.42]$. Given a light of color $[2.5 \ 1.5 \ 1.0]$ and direction $[0.52 \ 0.78 \ 0.35]$, what will be the diffuse component of p's final color?
156. What is the normal to a triangle defined by vertices $[3.0 \ -1.0 \ 2.0]$, $[-4.0 \ -3.0 \ 1.0]$, and $[1.0 \ -4.0 \ -5.0]$ (listed in the order of positive rotation)?
157. What is the normal to a triangle defined by vertices $[-4.0 \ -4.0 \ -4.0]$, $[-5.0 \ 1.0 \ 2.0]$, and $[-3.0 \ 0.0 \ -2.0]$ (listed in the order of positive rotation)?
158. Given a point location of $[3.0 \ -2.0 \ -1.0]$ and a light location of $[-1.0 \ 2.0 \ -4.0]$, what is the light direction? (Remember to normalize.)
159. Point p has a surface color of $[0.3 \ 1.0 \ 1.0]$ and a surface normal of $[0.23 \ 0.37 \ 0.9]$. Given a light of color $[1.0 \ 1.0 \ 1.0]$ and direction $[0.8 \ 0.01 \ 0.6]$, what will be the diffuse component of p's final color?
160. Point p has a surface color of $[1.2 \ 1.0 \ 1.0]$ and a surface normal of $[0.9 \ 0.23 \ 0.37]$. Given a light of color $[0.0 \ 0.8 \ 1.0]$ and direction $[0.42 \ 0.48 \ 0.77]$, a view direction $[0.84 \ 0.5 \ 0.21]$, and an ambient color $[0.7 \ 1.0 \ 0.7]$, what will be p's final color, with a Phong exponent of 2?
161. Given a point location of $[-3.0 \ -1.0 \ -4.0]$ and a light location of $[-3.0 \ -4.0 \ -1.0]$, what is the light direction? (Remember to normalize.)
162. What is the normal to a triangle defined by vertices $[2.0 \ 4.0 \ -5.0]$, $[-4.0 \ 2.0 \ 1.0]$, and $[-4.0 \ -4.0 \ 3.0]$ (listed in the order of positive rotation)?
163. What is the normal to a triangle defined by vertices $[1.0 \ 2.0 \ -3.0]$, $[-1.0 \ -5.0 \ -3.0]$, and $[4.0 \ 3.0 \ -2.0]$ (listed in the order of positive rotation)?

164. Point p has a surface color of $[4.0 \ 4.0 \ 1.0]$ and a surface normal of $[0.35 \ 0.52 \ 0.78]$. Given a light of color $[1.0 \ 0.0 \ 1.0]$ and direction $[0.0 \ 0.6 \ 0.8]$, a view direction $[0.78 \ 0.4 \ 0.48]$, and an ambient color $[4.0 \ 1.0 \ 0.0]$, what will be p 's final color, with a Phong exponent of 2?
165. Point p has a surface color of $[0.5 \ 1.0 \ 1.0]$ and a surface normal of $[0.3 \ 0.55 \ 0.78]$. Given a light of color $[4.0 \ 0.0 \ 1.0]$ and direction $[0.22 \ 0.7 \ 0.68]$, and a view direction $[0.78 \ 0.35 \ 0.52]$, 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 $[0.0 \ 0.8 \ 1.0]$ and a surface normal of $[0.6 \ 0.0 \ 0.8]$. Given a light of color $[3.0 \ 1.0 \ 2.0]$ and direction $[0.5 \ 0.21 \ 0.84]$, and a view direction $[0.58 \ 0.2 \ 0.79]$, 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 $[-5.0 \ 2.0 \ -1.0]$, $[-5.0 \ 4.0 \ -2.0]$, and $[2.0 \ 3.0 \ -5.0]$ (listed in the order of positive rotation)?
168. Given a point location of $[1.0 \ 2.0 \ -3.0]$ and a light location of $[2.0 \ 0.0 \ -2.0]$, what is the light direction? (Remember to normalize.)
169. What is the normal to a triangle defined by vertices $[-2.0 \ 4.0 \ -4.0]$, $[2.0 \ -5.0 \ -1.0]$, and $[3.0 \ 0.0 \ 0.0]$ (listed in the order of positive rotation)?
170. Given a point location of $[0.0 \ -4.0 \ -5.0]$ and a light location of $[-3.0 \ -4.0 \ -4.0]$, what is the light direction? (Remember to normalize.)
171. Point p has a surface color of $[1.0 \ 2.5 \ 1.0]$ and a surface normal of $[0.23 \ 0.37 \ 0.9]$. Given a light of color $[1.0 \ 2.5 \ 1.0]$ and direction $[0.59 \ 0.78 \ 0.21]$, and a view direction $[0.48 \ 0.77 \ 0.42]$, 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 $[0.5 \ 1.0 \ 1.0]$ and a surface normal of $[0.78 \ 0.35 \ 0.52]$. Given a light of color $[1.0 \ 0.8 \ 0.8]$ and direction $[0.61 \ 0.54 \ 0.58]$, a view direction $[0.2 \ 0.55 \ 0.81]$, and an ambient color $[0.5 \ 1.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
173. Point p has a surface color of $[0.2 \ 1.0 \ 0.8]$ and a surface normal of $[0.11 \ 0.59 \ 0.8]$. Given a light of color $[1.0 \ 2.0 \ 1.0]$ and direction $[0.2 \ 0.79 \ 0.58]$, and a view direction $[0.8 \ 0.6 \ 0.0]$, 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 $[1.0 \ 2.0 \ 0.0]$ and a surface normal of $[0.6 \ 0.0 \ 0.8]$. Given a light of color $[1.2 \ 1.2 \ 1.0]$ and direction $[0.78 \ 0.59 \ 0.21]$, a view direction $[0.59 \ 0.11 \ 0.8]$, and an ambient color $[0.7 \ 1.0 \ 1.3]$, what will be p 's final color, with a Phong exponent of 2?
175. Point p has a surface color of $[1.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.55 \ 0.3 \ 0.78]$. Given a light of color $[1.0 \ 0.5 \ 0.5]$ and direction $[0.37 \ 0.52 \ 0.77]$, a view direction $[0.6 \ 0.42 \ 0.68]$, and an ambient color $[1.0 \ 0.3 \ 0.0]$, what will be p 's final color, with a Phong exponent of 2?

176. Point p has a surface color of $[2.0 \ 4.0 \ 1.0]$ and a surface normal of $[0.11 \ 0.8 \ 0.59]$. Given a light of color $[0.5 \ 1.5 \ 1.0]$ and direction $[0.3 \ 0.55 \ 0.78]$, what will be the diffuse component of p 's final color?
177. What is the normal to a triangle defined by vertices $[0.0 \ 4.0 \ -3.0]$, $[-4.0 \ -1.0 \ -5.0]$, and $[4.0 \ 4.0 \ -2.0]$ (listed in the order of positive rotation)?
178. What is the normal to a triangle defined by vertices $[1.0 \ -5.0 \ 2.0]$, $[-4.0 \ 1.0 \ -2.0]$, and $[1.0 \ 4.0 \ -5.0]$ (listed in the order of positive rotation)?
179. Point p has a surface color of $[1.0 \ 1.3 \ 1.7]$ and a surface normal of $[0.59 \ 0.8 \ 0.11]$. Given a light of color $[2.0 \ 1.0 \ 2.5]$ and direction $[0.52 \ 0.37 \ 0.77]$, what will be the diffuse component of p 's final color?
180. What is the normal to a triangle defined by vertices $[-2.0 \ -3.0 \ 3.0]$, $[0.0 \ -3.0 \ 4.0]$, and $[-4.0 \ 0.0 \ -5.0]$ (listed in the order of positive rotation)?
181. What is the normal to a triangle defined by vertices $[2.0 \ 3.0 \ -5.0]$, $[-3.0 \ -5.0 \ 2.0]$, and $[-3.0 \ -4.0 \ 3.0]$ (listed in the order of positive rotation)?
182. Point p has a surface color of $[1.0 \ 0.3 \ 1.7]$ and a surface normal of $[0.52 \ 0.77 \ 0.37]$. Given a light of color $[1.2 \ 1.0 \ 1.0]$ and direction $[0.48 \ 0.78 \ 0.4]$, a view direction $[0.44 \ 0.32 \ 0.84]$, and an ambient color $[0.3 \ 0.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
183. Point p has a surface color of $[1.0 \ 1.0 \ 5.0]$ and a surface normal of $[0.78 \ 0.4 \ 0.48]$. Given a light of color $[0.0 \ 3.0 \ 1.0]$ and direction $[0.4 \ 0.48 \ 0.78]$, a view direction $[0.88 \ 0.37 \ 0.3]$, and an ambient color $[0.3 \ 1.0 \ 1.3]$, what will be p 's final color, with a Phong exponent of 2?
184. What is the normal to a triangle defined by vertices $[-4.0 \ 2.0 \ 0.0]$, $[3.0 \ -5.0 \ -3.0]$, and $[-4.0 \ 0.0 \ 3.0]$ (listed in the order of positive rotation)?
185. Point p has a surface color of $[1.0 \ 5.0 \ 3.0]$ and a surface normal of $[0.2 \ 0.81 \ 0.55]$. Given a light of color $[2.0 \ 0.0 \ 1.0]$ and direction $[0.37 \ 0.23 \ 0.9]$, and a view direction $[0.8 \ 0.11 \ 0.59]$, 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 $[0.8 \ 1.0 \ 1.0]$ and a surface normal of $[0.65 \ 0.49 \ 0.58]$. Given a light of color $[1.0 \ 5.0 \ 0.0]$ and direction $[0.3 \ 0.78 \ 0.55]$, a view direction $[0.8 \ 0.59 \ 0.11]$, and an ambient color $[1.0 \ 0.3 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
187. Point p has a surface color of $[0.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.4 \ 0.48 \ 0.78]$. Given a light of color $[1.0 \ 0.2 \ 0.2]$ and direction $[0.88 \ 0.37 \ 0.3]$, a view direction $[0.11 \ 0.8 \ 0.59]$, and an ambient color $[3.0 \ 1.0 \ 0.0]$, what will be p 's final color, with a Phong exponent of 2?
188. What is the normal to a triangle defined by vertices $[3.0 \ 2.0 \ -1.0]$, $[3.0 \ 3.0 \ -5.0]$, and $[-4.0 \ 2.0 \ -1.0]$ (listed in the order of positive rotation)?

189. Point p has a surface color of $[0.5 \ 1.0 \ 1.0]$ and a surface normal of $[0.21 \ 0.78 \ 0.59]$. Given a light of color $[2.0 \ 3.0 \ 1.0]$ and direction $[0.0 \ 0.8 \ 0.6]$, and a view direction $[0.55 \ 0.81 \ 0.2]$, 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 $[0.0 \ 1.0 \ 0.5]$ and a surface normal of $[0.52 \ 0.35 \ 0.78]$. Given a light of color $[1.3 \ 1.0 \ 0.3]$ and direction $[0.6 \ 0.0 \ 0.8]$, what will be the diffuse component of p 's final color?
191. Point p has a surface color of $[1.0 \ 0.8 \ 0.2]$ and a surface normal of $[0.3 \ 0.37 \ 0.88]$. Given a light of color $[0.0 \ 1.0 \ 1.0]$ and direction $[0.5 \ 0.21 \ 0.84]$, what will be the diffuse component of p 's final color?
192. What is the normal to a triangle defined by vertices $[-1.0 \ 3.0 \ -3.0]$, $[-2.0 \ -3.0 \ 1.0]$, and $[-4.0 \ -1.0 \ 1.0]$ (listed in the order of positive rotation)?
193. Point p has a surface color of $[1.0 \ 0.0 \ 0.2]$ and a surface normal of $[0.2 \ 0.79 \ 0.58]$. Given a light of color $[1.0 \ 0.0 \ 4.0]$ and direction $[0.77 \ 0.37 \ 0.52]$, what will be the diffuse component of p 's final color?
194. What is the normal to a triangle defined by vertices $[1.0 \ -2.0 \ 1.0]$, $[-1.0 \ 3.0 \ -1.0]$, and $[1.0 \ -4.0 \ -4.0]$ (listed in the order of positive rotation)?
195. Point p has a surface color of $[0.0 \ 5.0 \ 1.0]$ and a surface normal of $[0.35 \ 0.52 \ 0.78]$. Given a light of color $[1.0 \ 1.0 \ 1.0]$ and direction $[0.6 \ 0.0 \ 0.8]$, what will be the diffuse component of p 's final color?
196. What is the normal to a triangle defined by vertices $[-4.0 \ 3.0 \ 0.0]$, $[-4.0 \ -4.0 \ 4.0]$, and $[-1.0 \ 2.0 \ -2.0]$ (listed in the order of positive rotation)?
197. Point p has a surface color of $[1.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.52 \ 0.35 \ 0.78]$. Given a light of color $[0.5 \ 0.2 \ 1.0]$ and direction $[0.4 \ 0.48 \ 0.78]$, a view direction $[0.78 \ 0.55 \ 0.3]$, and an ambient color $[1.0 \ 0.3 \ 0.7]$, what will be p 's final color, with a Phong exponent of 2?
198. Given a point location of $[1.0 \ 2.0 \ -2.0]$ and a light location of $[0.0 \ 4.0 \ -2.0]$, what is the light direction? (Remember to normalize.)
199. Point p has a surface color of $[1.5 \ 0.0 \ 1.0]$ and a surface normal of $[0.35 \ 0.52 \ 0.78]$. Given a light of color $[5.0 \ 3.0 \ 1.0]$ and direction $[0.84 \ 0.32 \ 0.44]$, and a view direction $[0.59 \ 0.8 \ 0.11]$, 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 $[-4.0 \ 0.0 \ -4.0]$, $[2.0 \ 0.0 \ -2.0]$, and $[-3.0 \ -4.0 \ 0.0]$ (listed in the order of positive rotation)?
201. Point p has a surface color of $[1.0 \ 1.5 \ 1.0]$ and a surface normal of $[0.77 \ 0.42 \ 0.48]$. Given a light of color $[3.0 \ 3.0 \ 1.0]$ and direction $[0.48 \ 0.4 \ 0.78]$, and a view direction $[0.58 \ 0.2 \ 0.79]$, 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 $[0.3 \ 1.0 \ 0.7]$ and a surface normal of $[0.21 \ 0.59 \ 0.78]$. Given a light of color $[1.0 \ 1.0 \ 1.0]$ and direction $[0.8 \ 0.6 \ 0.0]$, and a view direction $[0.32 \ 0.44 \ 0.84]$, what will be the specular component of p 's final color, with a Phong exponent of 2?
203. Given a point location of $[-3.0 \ 0.0 \ -5.0]$ and a light location of $[-4.0 \ 4.0 \ -1.0]$, what is the light direction? (Remember to normalize.)
204. What is the normal to a triangle defined by vertices $[0.0 \ 1.0 \ -4.0]$, $[0.0 \ 4.0 \ -5.0]$, and $[-4.0 \ -5.0 \ -4.0]$ (listed in the order of positive rotation)?
205. What is the normal to a triangle defined by vertices $[1.0 \ -2.0 \ 0.0]$, $[-1.0 \ 2.0 \ -4.0]$, and $[-4.0 \ 3.0 \ -4.0]$ (listed in the order of positive rotation)?
206. Given a point location of $[2.0 \ -1.0 \ 1.0]$ and a light location of $[-5.0 \ 3.0 \ 2.0]$, what is the light direction? (Remember to normalize.)
207. Given a point location of $[2.0 \ 4.0 \ 1.0]$ and a light location of $[-4.0 \ -2.0 \ -3.0]$, what is the light direction? (Remember to normalize.)
208. Point p has a surface color of $[1.7 \ 1.0 \ 0.7]$ and a surface normal of $[0.8 \ 0.0 \ 0.6]$. Given a light of color $[1.0 \ 2.5 \ 1.0]$ and direction $[0.52 \ 0.78 \ 0.35]$, a view direction $[0.22 \ 0.44 \ 0.87]$, and an ambient color $[0.0 \ 1.0 \ 1.2]$, what will be p 's final color, with a Phong exponent of 2?
209. Given a point location of $[-5.0 \ -2.0 \ 1.0]$ and a light location of $[0.0 \ 4.0 \ 1.0]$, what is the light direction? (Remember to normalize.)
210. Point p has a surface color of $[1.0 \ 1.0 \ 1.3]$ and a surface normal of $[0.42 \ 0.6 \ 0.68]$. Given a light of color $[1.3 \ 1.3 \ 1.0]$ and direction $[0.77 \ 0.52 \ 0.37]$, a view direction $[0.48 \ 0.78 \ 0.4]$, and an ambient color $[0.0 \ 1.0 \ 0.5]$, what will be p 's final color, with a Phong exponent of 2?
211. Point p has a surface color of $[1.0 \ 0.2 \ 0.5]$ and a surface normal of $[0.6 \ 0.01 \ 0.8]$. Given a light of color $[1.0 \ 0.7 \ 1.0]$ and direction $[0.88 \ 0.3 \ 0.37]$, and a view direction $[0.7 \ 0.22 \ 0.68]$, 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 $[1.0 \ 0.3 \ 1.7]$ and a surface normal of $[0.79 \ 0.58 \ 0.2]$. Given a light of color $[2.0 \ 1.0 \ 1.5]$ and direction $[0.58 \ 0.49 \ 0.65]$, what will be the diffuse component of p 's final color?
213. What is the normal to a triangle defined by vertices $[-4.0 \ 3.0 \ -4.0]$, $[1.0 \ 2.0 \ 0.0]$, and $[-1.0 \ 3.0 \ 0.0]$ (listed in the order of positive rotation)?
214. Point p has a surface color of $[3.0 \ 1.0 \ 2.0]$ and a surface normal of $[0.21 \ 0.59 \ 0.78]$. Given a light of color $[1.0 \ 1.0 \ 1.3]$ and direction $[0.68 \ 0.42 \ 0.6]$, and a view direction $[0.8 \ 0.01 \ 0.6]$, 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 $[-3.0 \ 2.0 \ 3.0]$, $[0.0 \ -3.0 \ 4.0]$, and $[-4.0 \ -1.0 \ -1.0]$ (listed in the order of positive rotation)?

216. Point p has a surface color of $[1.0 \ 1.2 \ 0.0]$ and a surface normal of $[0.48 \ 0.78 \ 0.4]$. Given a light of color $[2.0 \ 1.0 \ 2.0]$ and direction $[0.3 \ 0.78 \ 0.55]$, a view direction $[0.42 \ 0.6 \ 0.68]$, and an ambient color $[1.2 \ 0.5 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
217. Given a point location of $[-5.0 \ 0.0 \ -2.0]$ and a light location of $[1.0 \ -5.0 \ -2.0]$, what is the light direction? (Remember to normalize.)
218. Point p has a surface color of $[0.8 \ 0.2 \ 1.0]$ and a surface normal of $[0.81 \ 0.55 \ 0.2]$. Given a light of color $[4.0 \ 5.0 \ 1.0]$ and direction $[0.65 \ 0.58 \ 0.49]$, what will be the diffuse component of p's final color?
219. Point p has a surface color of $[1.0 \ 0.8 \ 0.0]$ and a surface normal of $[0.9 \ 0.23 \ 0.37]$. Given a light of color $[1.0 \ 1.0 \ 1.0]$ and direction $[0.42 \ 0.6 \ 0.68]$, a view direction $[0.01 \ 0.6 \ 0.8]$, and an ambient color $[1.0 \ 2.0 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
220. What is the normal to a triangle defined by vertices $[1.0 \ -4.0 \ -1.0]$, $[3.0 \ -5.0 \ -5.0]$, and $[1.0 \ -3.0 \ 0.0]$ (listed in the order of positive rotation)?
221. What is the normal to a triangle defined by vertices $[-4.0 \ -1.0 \ 0.0]$, $[4.0 \ -5.0 \ -3.0]$, and $[-3.0 \ -3.0 \ 3.0]$ (listed in the order of positive rotation)?
222. Point p has a surface color of $[1.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.65 \ 0.49 \ 0.58]$. Given a light of color $[4.0 \ 0.0 \ 1.0]$ and direction $[0.84 \ 0.5 \ 0.21]$, and a view direction $[0.79 \ 0.2 \ 0.58]$, 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 $[1.7 \ 1.0 \ 1.3]$ and a surface normal of $[0.44 \ 0.84 \ 0.32]$. Given a light of color $[1.2 \ 0.2 \ 1.0]$ and direction $[0.54 \ 0.69 \ 0.48]$, a view direction $[0.87 \ 0.22 \ 0.44]$, and an ambient color $[0.7 \ 0.7 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
224. Point p has a surface color of $[1.2 \ 1.0 \ 0.2]$ and a surface normal of $[0.78 \ 0.55 \ 0.3]$. Given a light of color $[1.0 \ 4.0 \ 0.0]$ and direction $[0.54 \ 0.58 \ 0.61]$, and a view direction $[0.65 \ 0.49 \ 0.58]$, 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 $[1.0 \ 0.3 \ 0.3]$ and a surface normal of $[0.54 \ 0.61 \ 0.58]$. Given a light of color $[1.0 \ 0.0 \ 1.0]$ and direction $[0.0 \ 0.6 \ 0.8]$, and a view direction $[0.3 \ 0.78 \ 0.55]$, 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 $[0.3 \ 1.3 \ 1.0]$ and a surface normal of $[0.3 \ 0.55 \ 0.78]$. Given a light of color $[1.0 \ 4.0 \ 0.0]$ and direction $[0.3 \ 0.88 \ 0.37]$, what will be the diffuse component of p's final color?
227. Given a point location of $[2.0 \ 1.0 \ -3.0]$ and a light location of $[3.0 \ -2.0 \ 4.0]$, what is the light direction? (Remember to normalize.)
228. Point p has a surface color of $[0.5 \ 1.0 \ 1.0]$ and a surface normal of $[0.52 \ 0.37 \ 0.77]$. Given a light of color $[1.0 \ 5.0 \ 1.0]$ and direction $[0.77 \ 0.52 \ 0.37]$, what will be the diffuse component of p's final color?

229. Point p has a surface color of $[1.0 \ 0.7 \ 1.0]$ and a surface normal of $[0.58 \ 0.49 \ 0.65]$. Given a light of color $[5.0 \ 1.0 \ 0.0]$ and direction $[0.81 \ 0.55 \ 0.2]$, and a view direction $[0.3 \ 0.37 \ 0.88]$, 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 $[0.2 \ 1.0 \ 0.5]$ and a surface normal of $[0.37 \ 0.9 \ 0.23]$. Given a light of color $[1.2 \ 0.8 \ 1.0]$ and direction $[0.0 \ 0.6 \ 0.8]$, a view direction $[0.68 \ 0.6 \ 0.42]$, and an ambient color $[1.0 \ 1.0 \ 0.8]$, what will be p 's final color, with a Phong exponent of 2?
231. Given a point location of $[2.0 \ -2.0 \ -1.0]$ and a light location of $[2.0 \ -3.0 \ -2.0]$, what is the light direction? (Remember to normalize.)
232. Given a point location of $[-5.0 \ -2.0 \ 4.0]$ and a light location of $[2.0 \ -2.0 \ -3.0]$, what is the light direction? (Remember to normalize.)
233. Given a point location of $[2.0 \ 0.0 \ -4.0]$ and a light location of $[-2.0 \ -3.0 \ 0.0]$, what is the light direction? (Remember to normalize.)
234. Given a point location of $[2.0 \ -2.0 \ -4.0]$ and a light location of $[-1.0 \ -3.0 \ 2.0]$, what is the light direction? (Remember to normalize.)
235. Given a point location of $[1.0 \ 0.0 \ -3.0]$ and a light location of $[0.0 \ 2.0 \ 1.0]$, what is the light direction? (Remember to normalize.)
236. Point p has a surface color of $[0.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.01 \ 0.8 \ 0.6]$. Given a light of color $[0.5 \ 2.5 \ 1.0]$ and direction $[0.54 \ 0.48 \ 0.69]$, a view direction $[0.55 \ 0.3 \ 0.78]$, and an ambient color $[0.2 \ 0.8 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
237. Point p has a surface color of $[0.0 \ 1.0 \ 0.2]$ and a surface normal of $[0.22 \ 0.44 \ 0.87]$. Given a light of color $[3.0 \ 4.0 \ 1.0]$ and direction $[0.88 \ 0.37 \ 0.3]$, and a view direction $[0.37 \ 0.88 \ 0.3]$, 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 $[1.0 \ 1.3 \ 1.7]$ and a surface normal of $[0.42 \ 0.68 \ 0.6]$. Given a light of color $[1.0 \ 0.2 \ 0.2]$ and direction $[0.78 \ 0.35 \ 0.52]$, a view direction $[0.68 \ 0.22 \ 0.7]$, and an ambient color $[2.0 \ 2.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
239. Given a point location of $[-4.0 \ 1.0 \ -5.0]$ and a light location of $[4.0 \ -1.0 \ -2.0]$, what is the light direction? (Remember to normalize.)
240. Point p has a surface color of $[1.0 \ 0.5 \ 2.0]$ and a surface normal of $[0.37 \ 0.3 \ 0.88]$. Given a light of color $[1.3 \ 1.3 \ 1.0]$ and direction $[0.69 \ 0.54 \ 0.48]$, a view direction $[0.68 \ 0.7 \ 0.22]$, and an ambient color $[0.7 \ 0.3 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
241. Point p has a surface color of $[0.7 \ 0.0 \ 1.0]$ and a surface normal of $[0.23 \ 0.9 \ 0.37]$. Given a light of color $[1.2 \ 0.0 \ 1.0]$ and direction $[0.01 \ 0.6 \ 0.8]$, what will be the diffuse component of p 's final color?

242. Point p has a surface color of $[1.0 \ 5.0 \ 4.0]$ and a surface normal of $[0.0 \ 0.6 \ 0.8]$. Given a light of color $[1.0 \ 1.7 \ 0.0]$ and direction $[0.59 \ 0.8 \ 0.11]$, and a view direction $[0.55 \ 0.78 \ 0.3]$, 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 $[3.0 \ 1.0 \ 1.0]$, $[3.0 \ 1.0 \ 3.0]$, and $[0.0 \ -2.0 \ -2.0]$ (listed in the order of positive rotation)?
244. Point p has a surface color of $[0.7 \ 0.3 \ 1.0]$ and a surface normal of $[0.44 \ 0.87 \ 0.22]$. Given a light of color $[0.8 \ 0.2 \ 1.0]$ and direction $[0.21 \ 0.78 \ 0.59]$, and a view direction $[0.3 \ 0.55 \ 0.78]$, 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 $[-5.0 \ 3.0 \ -3.0]$, $[-5.0 \ 3.0 \ 2.0]$, and $[2.0 \ 0.0 \ 3.0]$ (listed in the order of positive rotation)?
246. Point p has a surface color of $[1.0 \ 2.0 \ 2.0]$ and a surface normal of $[0.84 \ 0.5 \ 0.21]$. Given a light of color $[1.0 \ 1.0 \ 0.0]$ and direction $[0.55 \ 0.3 \ 0.78]$, a view direction $[0.48 \ 0.77 \ 0.42]$, and an ambient color $[2.0 \ 1.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
247. Point p has a surface color of $[2.0 \ 1.0 \ 2.0]$ and a surface normal of $[0.54 \ 0.69 \ 0.48]$. Given a light of color $[0.5 \ 2.5 \ 1.0]$ and direction $[0.84 \ 0.32 \ 0.44]$, and a view direction $[0.87 \ 0.44 \ 0.22]$, 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 $[-5.0 \ -2.0 \ -1.0]$, $[-1.0 \ -4.0 \ 0.0]$, and $[4.0 \ -2.0 \ 1.0]$ (listed in the order of positive rotation)?
249. Point p has a surface color of $[1.0 \ 1.0 \ 0.0]$ and a surface normal of $[0.58 \ 0.49 \ 0.65]$. Given a light of color $[1.0 \ 0.7 \ 0.7]$ and direction $[0.77 \ 0.52 \ 0.37]$, and a view direction $[0.5 \ 0.21 \ 0.84]$, what will be the specular component of p 's final color, with a Phong exponent of 2?
250. Given a point location of $[-2.0 \ 4.0 \ -5.0]$ and a light location of $[-1.0 \ -4.0 \ -4.0]$, what is the light direction? (Remember to normalize.)
251. What is the normal to a triangle defined by vertices $[-4.0 \ 4.0 \ 4.0]$, $[-1.0 \ -1.0 \ 0.0]$, and $[-1.0 \ -4.0 \ 4.0]$ (listed in the order of positive rotation)?
252. What is the normal to a triangle defined by vertices $[-3.0 \ -5.0 \ 3.0]$, $[3.0 \ 0.0 \ -3.0]$, and $[0.0 \ 0.0 \ 4.0]$ (listed in the order of positive rotation)?
253. Point p has a surface color of $[1.0 \ 0.5 \ 1.2]$ and a surface normal of $[0.48 \ 0.69 \ 0.54]$. Given a light of color $[2.5 \ 2.5 \ 1.0]$ and direction $[0.3 \ 0.78 \ 0.55]$, a view direction $[0.3 \ 0.55 \ 0.78]$, and an ambient color $[1.0 \ 3.0 \ 5.0]$, what will be p 's final color, with a Phong exponent of 2?
254. Point p has a surface color of $[0.5 \ 1.0 \ 0.2]$ and a surface normal of $[0.8 \ 0.11 \ 0.59]$. Given a light of color $[5.0 \ 3.0 \ 1.0]$ and direction $[0.44 \ 0.32 \ 0.84]$, and a view direction $[0.79 \ 0.2 \ 0.58]$, 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 $[1.0 \ 1.0 \ 0.5]$ and a surface normal of $[0.81 \ 0.2 \ 0.55]$. Given a light of color $[0.5 \ 1.0 \ 2.5]$ and direction $[0.3 \ 0.37 \ 0.88]$, what will be the diffuse component of p 's final color?
256. What is the normal to a triangle defined by vertices $[-5.0 \ -1.0 \ 1.0]$, $[-1.0 \ -5.0 \ -3.0]$, and $[2.0 \ 2.0 \ -3.0]$ (listed in the order of positive rotation)?
257. What is the normal to a triangle defined by vertices $[0.0 \ -4.0 \ -2.0]$, $[-1.0 \ -2.0 \ 2.0]$, and $[-2.0 \ -1.0 \ -1.0]$ (listed in the order of positive rotation)?
258. Point p has a surface color of $[1.0 \ 0.7 \ 0.0]$ and a surface normal of $[0.55 \ 0.3 \ 0.78]$. Given a light of color $[0.8 \ 1.0 \ 0.2]$ and direction $[0.37 \ 0.88 \ 0.3]$, a view direction $[0.48 \ 0.69 \ 0.54]$, and an ambient color $[1.2 \ 1.0 \ 1.2]$, what will be p 's final color, with a Phong exponent of 2?
259. Given a point location of $[2.0 \ 4.0 \ 3.0]$ and a light location of $[3.0 \ 2.0 \ 0.0]$, what is the light direction? (Remember to normalize.)
260. What is the normal to a triangle defined by vertices $[-5.0 \ 1.0 \ -1.0]$, $[0.0 \ 4.0 \ -1.0]$, and $[-5.0 \ -1.0 \ -2.0]$ (listed in the order of positive rotation)?
261. Point p has a surface color of $[2.0 \ 3.0 \ 1.0]$ and a surface normal of $[0.23 \ 0.9 \ 0.37]$. Given a light of color $[0.0 \ 1.7 \ 1.0]$ and direction $[0.8 \ 0.6 \ 0.0]$, a view direction $[0.69 \ 0.48 \ 0.54]$, and an ambient color $[1.0 \ 1.2 \ 0.2]$, what will be p 's final color, with a Phong exponent of 2?
262. Point p has a surface color of $[4.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.37 \ 0.9 \ 0.23]$. Given a light of color $[1.0 \ 1.0 \ 0.8]$ and direction $[0.44 \ 0.84 \ 0.32]$, and a view direction $[0.84 \ 0.44 \ 0.32]$, 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 $[5.0 \ 4.0 \ 1.0]$ and a surface normal of $[0.55 \ 0.2 \ 0.81]$. Given a light of color $[0.3 \ 1.0 \ 0.0]$ and direction $[0.49 \ 0.65 \ 0.58]$, a view direction $[0.6 \ 0.01 \ 0.8]$, and an ambient color $[1.0 \ 4.0 \ 0.0]$, what will be p 's final color, with a Phong exponent of 2?
264. Point p has a surface color of $[0.0 \ 1.0 \ 3.0]$ and a surface normal of $[0.55 \ 0.3 \ 0.78]$. Given a light of color $[0.3 \ 1.7 \ 1.0]$ and direction $[0.2 \ 0.81 \ 0.55]$, a view direction $[0.78 \ 0.48 \ 0.4]$, and an ambient color $[0.8 \ 1.0 \ 0.5]$, what will be p 's final color, with a Phong exponent of 2?
265. Point p has a surface color of $[1.0 \ 1.2 \ 1.0]$ and a surface normal of $[0.21 \ 0.84 \ 0.5]$. Given a light of color $[1.0 \ 2.0 \ 4.0]$ and direction $[0.58 \ 0.65 \ 0.49]$, what will be the diffuse component of p 's final color?
266. What is the normal to a triangle defined by vertices $[0.0 \ 0.0 \ 2.0]$, $[4.0 \ -3.0 \ 0.0]$, and $[0.0 \ -4.0 \ -5.0]$ (listed in the order of positive rotation)?
267. Point p has a surface color of $[1.7 \ 1.0 \ 0.0]$ and a surface normal of $[0.78 \ 0.48 \ 0.4]$. Given a light of color $[0.0 \ 2.0 \ 1.0]$ and direction $[0.3 \ 0.55 \ 0.78]$, what will be the diffuse component of p 's final color?

268. Point p has a surface color of $[3.0 \ 0.0 \ 1.0]$ and a surface normal of $[0.78 \ 0.59 \ 0.21]$. Given a light of color $[1.0 \ 4.0 \ 3.0]$ and direction $[0.21 \ 0.5 \ 0.84]$, what will be the diffuse component of p 's final color?
269. Point p has a surface color of $[1.0 \ 1.3 \ 1.3]$ and a surface normal of $[0.6 \ 0.8 \ 0.0]$. Given a light of color $[1.0 \ 0.2 \ 0.0]$ and direction $[0.65 \ 0.49 \ 0.58]$, a view direction $[0.54 \ 0.48 \ 0.69]$, and an ambient color $[0.3 \ 1.0 \ 1.7]$, what will be p 's final color, with a Phong exponent of 2?
270. Given a point location of $[-5.0 \ 2.0 \ -2.0]$ and a light location of $[-1.0 \ 4.0 \ 4.0]$, what is the light direction? (Remember to normalize.)
271. Point p has a surface color of $[0.3 \ 1.3 \ 1.0]$ and a surface normal of $[0.58 \ 0.79 \ 0.2]$. Given a light of color $[1.0 \ 1.0 \ 1.7]$ and direction $[0.55 \ 0.78 \ 0.3]$, and a view direction $[0.11 \ 0.59 \ 0.8]$, 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 $[0.2 \ 1.0 \ 0.2]$ and a surface normal of $[0.88 \ 0.37 \ 0.3]$. Given a light of color $[1.0 \ 1.0 \ 0.0]$ and direction $[0.3 \ 0.37 \ 0.88]$, a view direction $[0.58 \ 0.2 \ 0.79]$, and an ambient color $[0.5 \ 1.0 \ 1.5]$, what will be p 's final color, with a Phong exponent of 2?
273. Point p has a surface color of $[1.0 \ 1.0 \ 0.3]$ and a surface normal of $[0.79 \ 0.2 \ 0.58]$. Given a light of color $[1.0 \ 0.7 \ 0.7]$ and direction $[0.35 \ 0.78 \ 0.52]$, and a view direction $[0.78 \ 0.3 \ 0.55]$, 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 $[1.0 \ 1.0 \ 2.0]$ and a surface normal of $[0.52 \ 0.78 \ 0.35]$. Given a light of color $[1.0 \ 2.0 \ 1.0]$ and direction $[0.55 \ 0.78 \ 0.3]$, what will be the diffuse component of p 's final color?
275. What is the normal to a triangle defined by vertices $[1.0 \ 2.0 \ -5.0]$, $[-5.0 \ -4.0 \ 2.0]$, and $[-5.0 \ -4.0 \ 2.0]$ (listed in the order of positive rotation)?
276. Point p has a surface color of $[0.0 \ 0.0 \ 1.0]$ and a surface normal of $[0.78 \ 0.55 \ 0.3]$. Given a light of color $[0.2 \ 1.0 \ 1.2]$ and direction $[0.59 \ 0.21 \ 0.78]$, what will be the diffuse component of p 's final color?
277. Point p has a surface color of $[1.0 \ 0.0 \ 0.0]$ and a surface normal of $[0.69 \ 0.54 \ 0.48]$. Given a light of color $[1.0 \ 0.5 \ 1.0]$ and direction $[0.23 \ 0.9 \ 0.37]$, and a view direction $[0.69 \ 0.54 \ 0.48]$, 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 $[0.8 \ 1.0 \ 0.0]$ and a surface normal of $[0.58 \ 0.54 \ 0.61]$. Given a light of color $[1.2 \ 1.0 \ 1.2]$ and direction $[0.78 \ 0.3 \ 0.55]$, a view direction $[0.35 \ 0.52 \ 0.78]$, and an ambient color $[4.0 \ 4.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
279. Given a point location of $[-5.0 \ 3.0 \ -3.0]$ and a light location of $[-5.0 \ -4.0 \ -4.0]$, what is the light direction? (Remember to normalize.)

280. Point p has a surface color of $[0.0 \ 0.5 \ 1.0]$ and a surface normal of $[0.69 \ 0.54 \ 0.48]$. Given a light of color $[1.0 \ 1.0 \ 1.0]$ and direction $[0.22 \ 0.7 \ 0.68]$, a view direction $[0.55 \ 0.3 \ 0.78]$, and an ambient color $[1.0 \ 0.0 \ 4.0]$, what will be p 's final color, with a Phong exponent of 2?
281. Point p has a surface color of $[0.2 \ 1.0 \ 0.8]$ and a surface normal of $[0.84 \ 0.5 \ 0.21]$. Given a light of color $[1.0 \ 0.0 \ 0.0]$ and direction $[0.37 \ 0.88 \ 0.3]$, and a view direction $[0.54 \ 0.58 \ 0.61]$, 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 $[1.2 \ 0.8 \ 1.0]$ and a surface normal of $[0.3 \ 0.37 \ 0.88]$. Given a light of color $[2.0 \ 1.0 \ 1.0]$ and direction $[0.54 \ 0.61 \ 0.58]$, what will be the diffuse component of p 's final color?
283. Point p has a surface color of $[1.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.3 \ 0.78 \ 0.55]$. Given a light of color $[0.8 \ 1.0 \ 0.5]$ and direction $[0.68 \ 0.22 \ 0.7]$, a view direction $[0.5 \ 0.84 \ 0.21]$, and an ambient color $[1.3 \ 1.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
284. Point p has a surface color of $[2.0 \ 5.0 \ 1.0]$ and a surface normal of $[0.78 \ 0.48 \ 0.4]$. Given a light of color $[0.2 \ 0.5 \ 1.0]$ and direction $[0.3 \ 0.78 \ 0.55]$, what will be the diffuse component of p 's final color?
285. Point p has a surface color of $[1.0 \ 1.0 \ 1.7]$ and a surface normal of $[0.3 \ 0.37 \ 0.88]$. Given a light of color $[1.0 \ 0.2 \ 1.0]$ and direction $[0.58 \ 0.61 \ 0.54]$, a view direction $[0.2 \ 0.79 \ 0.58]$, and an ambient color $[1.5 \ 1.0 \ 2.0]$, what will be p 's final color, with a Phong exponent of 2?
286. What is the normal to a triangle defined by vertices $[-3.0 \ -4.0 \ 4.0]$, $[4.0 \ -4.0 \ -2.0]$, and $[4.0 \ 1.0 \ -3.0]$ (listed in the order of positive rotation)?
287. What is the normal to a triangle defined by vertices $[4.0 \ 3.0 \ 4.0]$, $[3.0 \ -4.0 \ 0.0]$, and $[-1.0 \ 0.0 \ 3.0]$ (listed in the order of positive rotation)?
288. Point p has a surface color of $[1.0 \ 3.0 \ 1.0]$ and a surface normal of $[0.11 \ 0.59 \ 0.8]$. Given a light of color $[1.0 \ 0.7 \ 1.0]$ and direction $[0.2 \ 0.81 \ 0.55]$, and a view direction $[0.84 \ 0.44 \ 0.32]$, 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 $[1.3 \ 1.0 \ 1.3]$ and a surface normal of $[0.54 \ 0.61 \ 0.58]$. Given a light of color $[1.0 \ 0.0 \ 0.0]$ and direction $[0.21 \ 0.59 \ 0.78]$, a view direction $[0.42 \ 0.48 \ 0.77]$, and an ambient color $[1.0 \ 1.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
290. Point p has a surface color of $[0.2 \ 1.0 \ 1.0]$ and a surface normal of $[0.79 \ 0.58 \ 0.2]$. Given a light of color $[0.0 \ 4.0 \ 1.0]$ and direction $[0.59 \ 0.8 \ 0.11]$, a view direction $[0.81 \ 0.2 \ 0.55]$, and an ambient color $[1.0 \ 0.8 \ 0.8]$, what will be p 's final color, with a Phong exponent of 2?
291. Point p has a surface color of $[0.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.77 \ 0.37 \ 0.52]$. Given a light of color $[1.0 \ 1.5 \ 2.0]$ and direction $[0.3 \ 0.37 \ 0.88]$, a view direction $[0.48 \ 0.78 \ 0.4]$, and an ambient color $[0.3 \ 1.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?

292. What is the normal to a triangle defined by vertices $[-2.0 \ 4.0 \ -3.0]$, $[-3.0 \ -4.0 \ -5.0]$, and $[-5.0 \ 2.0 \ 2.0]$ (listed in the order of positive rotation)?
293. Point p has a surface color of $[0.0 \ 1.0 \ 0.0]$ and a surface normal of $[0.69 \ 0.54 \ 0.48]$. Given a light of color $[0.5 \ 1.0 \ 1.5]$ and direction $[0.3 \ 0.37 \ 0.88]$, what will be the diffuse component of p 's final color?
294. Point p has a surface color of $[1.0 \ 2.5 \ 1.0]$ and a surface normal of $[0.78 \ 0.3 \ 0.55]$. Given a light of color $[1.0 \ 0.8 \ 0.0]$ and direction $[0.3 \ 0.55 \ 0.78]$, and a view direction $[0.37 \ 0.3 \ 0.88]$, 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 $[1.0 \ 0.3 \ 0.3]$ and a surface normal of $[0.37 \ 0.77 \ 0.52]$. Given a light of color $[1.7 \ 1.0 \ 1.0]$ and direction $[0.48 \ 0.69 \ 0.54]$, a view direction $[0.52 \ 0.78 \ 0.35]$, and an ambient color $[1.0 \ 1.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
296. Point p has a surface color of $[0.5 \ 0.5 \ 1.0]$ and a surface normal of $[0.5 \ 0.21 \ 0.84]$. Given a light of color $[2.0 \ 2.5 \ 1.0]$ and direction $[0.8 \ 0.6 \ 0.01]$, what will be the diffuse component of p 's final color?
297. What is the normal to a triangle defined by vertices $[-2.0 \ 1.0 \ -1.0]$, $[-1.0 \ 0.0 \ -1.0]$, and $[0.0 \ 4.0 \ 1.0]$ (listed in the order of positive rotation)?
298. Given a point location of $[-4.0 \ -2.0 \ 4.0]$ and a light location of $[1.0 \ 0.0 \ 0.0]$, what is the light direction? (Remember to normalize.)
299. Point p has a surface color of $[1.0 \ 1.0 \ 0.5]$ and a surface normal of $[0.77 \ 0.37 \ 0.52]$. Given a light of color $[0.2 \ 1.0 \ 1.0]$ and direction $[0.78 \ 0.48 \ 0.4]$, and a view direction $[0.48 \ 0.4 \ 0.78]$, 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 $[1.0 \ 2.5 \ 1.5]$ and a surface normal of $[0.6 \ 0.0 \ 0.8]$. Given a light of color $[1.0 \ 0.0 \ 2.0]$ and direction $[0.54 \ 0.58 \ 0.61]$, a view direction $[0.2 \ 0.58 \ 0.79]$, and an ambient color $[1.0 \ 1.0 \ 1.5]$, what will be p 's final color, with a Phong exponent of 2?
301. Point p has a surface color of $[1.7 \ 1.3 \ 1.0]$ and a surface normal of $[0.48 \ 0.54 \ 0.69]$. Given a light of color $[1.0 \ 2.0 \ 2.0]$ and direction $[0.6 \ 0.01 \ 0.8]$, and a view direction $[0.01 \ 0.8 \ 0.6]$, 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 $[-5.0 \ 3.0 \ -4.0]$, $[2.0 \ 0.0 \ -3.0]$, and $[4.0 \ -4.0 \ 2.0]$ (listed in the order of positive rotation)?
303. Point p has a surface color of $[2.5 \ 1.0 \ 2.0]$ and a surface normal of $[0.78 \ 0.55 \ 0.3]$. Given a light of color $[1.0 \ 0.5 \ 1.5]$ and direction $[0.78 \ 0.4 \ 0.48]$, what will be the diffuse component of p 's final color?
304. Given a point location of $[-4.0 \ 3.0 \ 3.0]$ and a light location of $[-1.0 \ -3.0 \ -4.0]$, what is the light direction? (Remember to normalize.)

305. What is the normal to a triangle defined by vertices $[-1.0 \ -4.0 \ -5.0]$, $[-2.0 \ -1.0 \ 4.0]$, and $[4.0 \ 2.0 \ -5.0]$ (listed in the order of positive rotation)?
306. What is the normal to a triangle defined by vertices $[1.0 \ 1.0 \ 3.0]$, $[-3.0 \ 3.0 \ 0.0]$, and $[2.0 \ -5.0 \ -2.0]$ (listed in the order of positive rotation)?
307. What is the normal to a triangle defined by vertices $[-3.0 \ 1.0 \ 2.0]$, $[-5.0 \ 1.0 \ 4.0]$, and $[3.0 \ 1.0 \ 1.0]$ (listed in the order of positive rotation)?
308. Point p has a surface color of $[1.0 \ 0.0 \ 2.0]$ and a surface normal of $[0.01 \ 0.6 \ 0.8]$. Given a light of color $[1.2 \ 1.0 \ 0.8]$ and direction $[0.78 \ 0.4 \ 0.48]$, and a view direction $[0.35 \ 0.52 \ 0.78]$, 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 $[2.0 \ 0.0 \ -5.0]$, $[3.0 \ 0.0 \ 4.0]$, and $[-4.0 \ 4.0 \ -2.0]$ (listed in the order of positive rotation)?
310. What is the normal to a triangle defined by vertices $[2.0 \ -4.0 \ -4.0]$, $[-2.0 \ 1.0 \ 4.0]$, and $[-1.0 \ -4.0 \ -4.0]$ (listed in the order of positive rotation)?
311. Point p has a surface color of $[1.0 \ 1.0 \ 3.0]$ and a surface normal of $[0.48 \ 0.4 \ 0.78]$. Given a light of color $[1.0 \ 0.5 \ 0.5]$ and direction $[0.21 \ 0.78 \ 0.59]$, and a view direction $[0.42 \ 0.77 \ 0.48]$, 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 $[1.0 \ 4.0 \ -4.0]$, $[-4.0 \ 1.0 \ 0.0]$, and $[-1.0 \ 2.0 \ -3.0]$ (listed in the order of positive rotation)?
313. Point p has a surface color of $[0.0 \ 0.0 \ 1.0]$ and a surface normal of $[0.55 \ 0.78 \ 0.3]$. Given a light of color $[1.0 \ 1.0 \ 2.5]$ and direction $[0.78 \ 0.4 \ 0.48]$, and a view direction $[0.58 \ 0.49 \ 0.65]$, 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 $[0.5 \ 1.0 \ 0.8]$ and a surface normal of $[0.01 \ 0.8 \ 0.6]$. Given a light of color $[3.0 \ 3.0 \ 1.0]$ and direction $[0.3 \ 0.78 \ 0.55]$, a view direction $[0.59 \ 0.21 \ 0.78]$, and an ambient color $[0.0 \ 1.0 \ 0.8]$, what will be p's final color, with a Phong exponent of 2?
315. Point p has a surface color of $[1.7 \ 1.0 \ 1.3]$ and a surface normal of $[0.65 \ 0.58 \ 0.49]$. Given a light of color $[1.0 \ 0.0 \ 2.0]$ and direction $[0.79 \ 0.58 \ 0.2]$, and a view direction $[0.54 \ 0.69 \ 0.48]$, 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 $[1.0 \ 0.7 \ 1.0]$ and a surface normal of $[0.23 \ 0.37 \ 0.9]$. Given a light of color $[0.8 \ 1.0 \ 1.0]$ and direction $[0.78 \ 0.35 \ 0.52]$, and a view direction $[0.4 \ 0.48 \ 0.78]$, 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 $[1.0 \ 4.0 \ 5.0]$ and a surface normal of $[0.84 \ 0.32 \ 0.44]$. Given a light of color $[0.8 \ 1.0 \ 1.0]$ and direction $[0.54 \ 0.69 \ 0.48]$, what will be the diffuse component of p's final color?

318. Point p has a surface color of $[0.3 \ 1.0 \ 0.0]$ and a surface normal of $[0.61 \ 0.58 \ 0.54]$. Given a light of color $[1.0 \ 1.0 \ 0.0]$ and direction $[0.7 \ 0.68 \ 0.22]$, and a view direction $[0.88 \ 0.37 \ 0.3]$, 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 $[3.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.79 \ 0.58 \ 0.2]$. Given a light of color $[1.0 \ 0.0 \ 0.3]$ and direction $[0.81 \ 0.55 \ 0.2]$, and a view direction $[0.48 \ 0.77 \ 0.42]$, 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 $[2.5 \ 1.0 \ 1.5]$ and a surface normal of $[0.42 \ 0.48 \ 0.77]$. Given a light of color $[1.0 \ 1.0 \ 3.0]$ and direction $[0.8 \ 0.0 \ 0.6]$, what will be the diffuse component of p 's final color?
321. What is the normal to a triangle defined by vertices $[1.0 \ -5.0 \ 2.0]$, $[-3.0 \ -4.0 \ 2.0]$, and $[-3.0 \ -4.0 \ 0.0]$ (listed in the order of positive rotation)?
322. What is the normal to a triangle defined by vertices $[2.0 \ 1.0 \ -1.0]$, $[-4.0 \ -5.0 \ -5.0]$, and $[-5.0 \ -2.0 \ 1.0]$ (listed in the order of positive rotation)?
323. Given a point location of $[4.0 \ 4.0 \ 3.0]$ and a light location of $[-3.0 \ 2.0 \ -3.0]$, what is the light direction? (Remember to normalize.)
324. Point p has a surface color of $[4.0 \ 2.0 \ 1.0]$ and a surface normal of $[0.48 \ 0.78 \ 0.4]$. Given a light of color $[1.0 \ 1.0 \ 1.0]$ and direction $[0.65 \ 0.58 \ 0.49]$, and a view direction $[0.59 \ 0.78 \ 0.21]$, 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 $[-5.0 \ 0.0 \ -4.0]$, $[-2.0 \ 1.0 \ 0.0]$, and $[2.0 \ -1.0 \ 4.0]$ (listed in the order of positive rotation)?
326. Given a point location of $[-4.0 \ -4.0 \ 0.0]$ and a light location of $[0.0 \ -3.0 \ 1.0]$, what is the light direction? (Remember to normalize.)
327. Given a point location of $[2.0 \ -3.0 \ -5.0]$ and a light location of $[-2.0 \ -5.0 \ 4.0]$, what is the light direction? (Remember to normalize.)
328. Given a point location of $[0.0 \ -5.0 \ -5.0]$ and a light location of $[0.0 \ -2.0 \ -1.0]$, what is the light direction? (Remember to normalize.)
329. Point p has a surface color of $[1.0 \ 4.0 \ 1.0]$ and a surface normal of $[0.54 \ 0.58 \ 0.61]$. Given a light of color $[0.5 \ 1.0 \ 1.0]$ and direction $[0.37 \ 0.77 \ 0.52]$, what will be the diffuse component of p 's final color?
330. Given a point location of $[1.0 \ -5.0 \ 2.0]$ and a light location of $[-3.0 \ -2.0 \ 3.0]$, what is the light direction? (Remember to normalize.)
331. Point p has a surface color of $[3.0 \ 0.0 \ 1.0]$ and a surface normal of $[0.68 \ 0.42 \ 0.6]$. Given a light of color $[1.2 \ 1.2 \ 1.0]$ and direction $[0.79 \ 0.2 \ 0.58]$, what will be the diffuse component of p 's final color?
332. Given a point location of $[-4.0 \ 4.0 \ 0.0]$ and a light location of $[4.0 \ 3.0 \ 0.0]$, what is the light direction? (Remember to normalize.)

333. Point p has a surface color of $[0.5 \ 0.5 \ 1.0]$ and a surface normal of $[0.01 \ 0.6 \ 0.8]$. Given a light of color $[1.0 \ 1.0 \ 1.0]$ and direction $[0.22 \ 0.87 \ 0.44]$, what will be the diffuse component of p 's final color?
334. Point p has a surface color of $[1.0 \ 1.0 \ 0.2]$ and a surface normal of $[0.54 \ 0.61 \ 0.58]$. Given a light of color $[1.0 \ 1.0 \ 1.0]$ and direction $[0.3 \ 0.55 \ 0.78]$, what will be the diffuse component of p 's final color?
335. Point p has a surface color of $[1.0 \ 0.2 \ 0.5]$ and a surface normal of $[0.7 \ 0.68 \ 0.22]$. Given a light of color $[3.0 \ 1.0 \ 4.0]$ and direction $[0.52 \ 0.77 \ 0.37]$, a view direction $[0.68 \ 0.22 \ 0.7]$, and an ambient color $[2.0 \ 3.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
336. Point p has a surface color of $[5.0 \ 4.0 \ 1.0]$ and a surface normal of $[0.78 \ 0.35 \ 0.52]$. Given a light of color $[1.0 \ 1.2 \ 1.0]$ and direction $[0.48 \ 0.4 \ 0.78]$, what will be the diffuse component of p 's final color?
337. Point p has a surface color of $[0.8 \ 1.0 \ 0.5]$ and a surface normal of $[0.58 \ 0.54 \ 0.61]$. Given a light of color $[2.0 \ 1.0 \ 0.0]$ and direction $[0.42 \ 0.48 \ 0.77]$, a view direction $[0.78 \ 0.21 \ 0.59]$, and an ambient color $[1.0 \ 0.0 \ 5.0]$, what will be p 's final color, with a Phong exponent of 2?
338. Given a point location of $[-2.0 \ 3.0 \ 2.0]$ and a light location of $[-2.0 \ -3.0 \ -2.0]$, what is the light direction? (Remember to normalize.)
339. Point p has a surface color of $[1.0 \ 1.7 \ 1.3]$ and a surface normal of $[0.48 \ 0.78 \ 0.4]$. Given a light of color $[0.8 \ 0.2 \ 1.0]$ and direction $[0.6 \ 0.01 \ 0.8]$, what will be the diffuse component of p 's final color?
340. Given a point location of $[4.0 \ -3.0 \ -2.0]$ and a light location of $[3.0 \ 0.0 \ 2.0]$, what is the light direction? (Remember to normalize.)
341. What is the normal to a triangle defined by vertices $[0.0 \ 2.0 \ -1.0]$, $[4.0 \ 3.0 \ 2.0]$, and $[0.0 \ 0.0 \ 4.0]$ (listed in the order of positive rotation)?
342. Given a point location of $[-2.0 \ -2.0 \ -1.0]$ and a light location of $[3.0 \ -2.0 \ 0.0]$, what is the light direction? (Remember to normalize.)
343. Given a point location of $[3.0 \ 2.0 \ -2.0]$ and a light location of $[-1.0 \ -4.0 \ -3.0]$, what is the light direction? (Remember to normalize.)
344. Point p has a surface color of $[1.7 \ 1.0 \ 1.0]$ and a surface normal of $[0.3 \ 0.37 \ 0.88]$. Given a light of color $[0.3 \ 1.0 \ 0.7]$ and direction $[0.3 \ 0.55 \ 0.78]$, what will be the diffuse component of p 's final color?
345. What is the normal to a triangle defined by vertices $[-1.0 \ -4.0 \ 2.0]$, $[3.0 \ -3.0 \ -3.0]$, and $[-5.0 \ -5.0 \ 4.0]$ (listed in the order of positive rotation)?
346. Point p has a surface color of $[1.5 \ 1.0 \ 2.5]$ and a surface normal of $[0.22 \ 0.44 \ 0.87]$. Given a light of color $[1.0 \ 0.8 \ 0.0]$ and direction $[0.84 \ 0.32 \ 0.44]$, and a view direction $[0.44 \ 0.32 \ 0.84]$, what will be the specular component of p 's final color, with a Phong exponent of 2?

347. Given a point location of $[1.0 \ -5.0 \ -1.0]$ and a light location of $[-5.0 \ -5.0 \ 4.0]$, what is the light direction? (Remember to normalize.)
348. Given a point location of $[0.0 \ 3.0 \ -5.0]$ and a light location of $[1.0 \ 2.0 \ 1.0]$, what is the light direction? (Remember to normalize.)
349. Point p has a surface color of $[1.0 \ 0.5 \ 0.5]$ and a surface normal of $[0.42 \ 0.48 \ 0.77]$. Given a light of color $[1.0 \ 0.0 \ 0.5]$ and direction $[0.2 \ 0.58 \ 0.79]$, and a view direction $[0.6 \ 0.8 \ 0.01]$, what will be the specular component of p's final color, with a Phong exponent of 2?
350. Given a point location of $[4.0 \ -3.0 \ -1.0]$ and a light location of $[3.0 \ 0.0 \ -3.0]$, what is the light direction? (Remember to normalize.)
351. Point p has a surface color of $[5.0 \ 5.0 \ 1.0]$ and a surface normal of $[0.49 \ 0.65 \ 0.58]$. Given a light of color $[0.5 \ 1.0 \ 0.5]$ and direction $[0.78 \ 0.55 \ 0.3]$, and a view direction $[0.11 \ 0.8 \ 0.59]$, 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 $[1.0 \ 1.7 \ 1.0]$ and a surface normal of $[0.78 \ 0.55 \ 0.3]$. Given a light of color $[0.7 \ 1.0 \ 0.3]$ and direction $[0.4 \ 0.78 \ 0.48]$, what will be the diffuse component of p's final color?
353. Given a point location of $[-2.0 \ -1.0 \ -1.0]$ and a light location of $[-3.0 \ 1.0 \ -3.0]$, what is the light direction? (Remember to normalize.)
354. Point p has a surface color of $[0.2 \ 0.2 \ 1.0]$ and a surface normal of $[0.11 \ 0.59 \ 0.8]$. Given a light of color $[1.3 \ 1.0 \ 1.0]$ and direction $[0.6 \ 0.8 \ 0.01]$, and a view direction $[0.79 \ 0.58 \ 0.2]$, 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 $[1.0 \ 3.0 \ 0.0]$, $[2.0 \ 2.0 \ 4.0]$, and $[-5.0 \ 3.0 \ 0.0]$ (listed in the order of positive rotation)?
356. Given a point location of $[-5.0 \ -1.0 \ 4.0]$ and a light location of $[-3.0 \ -5.0 \ -3.0]$, what is the light direction? (Remember to normalize.)
357. Given a point location of $[0.0 \ -3.0 \ -2.0]$ and a light location of $[-5.0 \ 1.0 \ 0.0]$, what is the light direction? (Remember to normalize.)
358. Given a point location of $[-5.0 \ -1.0 \ -4.0]$ and a light location of $[2.0 \ -5.0 \ 4.0]$, what is the light direction? (Remember to normalize.)
359. Point p has a surface color of $[0.5 \ 0.5 \ 1.0]$ and a surface normal of $[0.2 \ 0.58 \ 0.79]$. Given a light of color $[1.0 \ 1.2 \ 1.0]$ and direction $[0.55 \ 0.2 \ 0.81]$, and a view direction $[0.3 \ 0.88 \ 0.37]$, 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 $[5.0 \ 1.0 \ 3.0]$ and a surface normal of $[0.84 \ 0.21 \ 0.5]$. Given a light of color $[5.0 \ 1.0 \ 0.0]$ and direction $[0.2 \ 0.79 \ 0.58]$, a view direction $[0.22 \ 0.68 \ 0.7]$, and an ambient color $[1.5 \ 1.0 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?

361. Point p has a surface color of $[1.0 \ 0.8 \ 0.5]$ and a surface normal of $[0.2 \ 0.55 \ 0.81]$. Given a light of color $[1.0 \ 0.0 \ 0.0]$ and direction $[0.52 \ 0.77 \ 0.37]$, and a view direction $[0.68 \ 0.7 \ 0.22]$, 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 $[4.0 \ 1.0 \ 2.0]$ and a surface normal of $[0.59 \ 0.78 \ 0.21]$. Given a light of color $[1.0 \ 4.0 \ 0.0]$ and direction $[0.48 \ 0.77 \ 0.42]$, what will be the diffuse component of p 's final color?
363. What is the normal to a triangle defined by vertices $[1.0 \ 1.0 \ 1.0]$, $[-1.0 \ 4.0 \ -5.0]$, and $[-1.0 \ -1.0 \ -3.0]$ (listed in the order of positive rotation)?
364. Point p has a surface color of $[0.3 \ 1.0 \ 1.3]$ and a surface normal of $[0.42 \ 0.68 \ 0.6]$. Given a light of color $[1.0 \ 1.0 \ 1.0]$ and direction $[0.52 \ 0.35 \ 0.78]$, and a view direction $[0.42 \ 0.77 \ 0.48]$, 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 $[1.0 \ 1.0 \ 0.8]$ and a surface normal of $[0.61 \ 0.58 \ 0.54]$. Given a light of color $[4.0 \ 0.0 \ 1.0]$ and direction $[0.2 \ 0.55 \ 0.81]$, what will be the diffuse component of p 's final color?
366. Given a point location of $[-3.0 \ 0.0 \ 4.0]$ and a light location of $[0.0 \ 2.0 \ 3.0]$, what is the light direction? (Remember to normalize.)
367. What is the normal to a triangle defined by vertices $[0.0 \ 4.0 \ 4.0]$, $[0.0 \ -5.0 \ -4.0]$, and $[2.0 \ -1.0 \ -3.0]$ (listed in the order of positive rotation)?
368. Point p has a surface color of $[1.5 \ 1.0 \ 2.0]$ and a surface normal of $[0.69 \ 0.48 \ 0.54]$. Given a light of color $[0.5 \ 1.0 \ 0.5]$ and direction $[0.55 \ 0.81 \ 0.2]$, and a view direction $[0.87 \ 0.44 \ 0.22]$, 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 $[1.0 \ 0.0 \ 0.7]$ and a surface normal of $[0.59 \ 0.8 \ 0.11]$. Given a light of color $[2.5 \ 1.0 \ 1.5]$ and direction $[0.58 \ 0.79 \ 0.2]$, a view direction $[0.44 \ 0.32 \ 0.84]$, and an ambient color $[1.0 \ 5.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
370. Point p has a surface color of $[0.7 \ 1.0 \ 0.3]$ and a surface normal of $[0.01 \ 0.6 \ 0.8]$. Given a light of color $[1.0 \ 1.0 \ 2.0]$ and direction $[0.5 \ 0.21 \ 0.84]$, what will be the diffuse component of p 's final color?
371. Given a point location of $[3.0 \ 3.0 \ 1.0]$ and a light location of $[-2.0 \ -1.0 \ 2.0]$, what is the light direction? (Remember to normalize.)
372. What is the normal to a triangle defined by vertices $[-4.0 \ -3.0 \ 2.0]$, $[-4.0 \ -5.0 \ -3.0]$, and $[-3.0 \ -3.0 \ -4.0]$ (listed in the order of positive rotation)?
373. Point p has a surface color of $[1.0 \ 1.0 \ 0.0]$ and a surface normal of $[0.6 \ 0.42 \ 0.68]$. Given a light of color $[0.3 \ 1.0 \ 0.7]$ and direction $[0.7 \ 0.68 \ 0.22]$, and a view direction $[0.7 \ 0.68 \ 0.22]$, 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 $[1.0 \ 1.0 \ 0.0]$ and a surface normal of $[0.3 \ 0.55 \ 0.78]$. Given a light of color $[1.0 \ 1.0 \ 5.0]$ and direction $[0.21 \ 0.84 \ 0.5]$, what will be the diffuse component of p 's final color?
375. Point p has a surface color of $[0.5 \ 1.0 \ 0.8]$ and a surface normal of $[0.87 \ 0.22 \ 0.44]$. Given a light of color $[0.5 \ 1.2 \ 1.0]$ and direction $[0.22 \ 0.87 \ 0.44]$, what will be the diffuse component of p 's final color?
376. What is the normal to a triangle defined by vertices $[-2.0 \ -2.0 \ 1.0]$, $[3.0 \ 1.0 \ 4.0]$, and $[-2.0 \ 1.0 \ -1.0]$ (listed in the order of positive rotation)?
377. Given a point location of $[-5.0 \ 0.0 \ 1.0]$ and a light location of $[-5.0 \ 3.0 \ -3.0]$, what is the light direction? (Remember to normalize.)
378. Point p has a surface color of $[1.0 \ 0.2 \ 0.8]$ and a surface normal of $[0.84 \ 0.32 \ 0.44]$. Given a light of color $[1.0 \ 0.0 \ 1.0]$ and direction $[0.54 \ 0.69 \ 0.48]$, a view direction $[0.8 \ 0.11 \ 0.59]$, and an ambient color $[1.0 \ 4.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
379. Point p has a surface color of $[1.5 \ 1.0 \ 2.5]$ and a surface normal of $[0.44 \ 0.84 \ 0.32]$. Given a light of color $[1.0 \ 1.0 \ 1.0]$ and direction $[0.78 \ 0.52 \ 0.35]$, a view direction $[0.58 \ 0.54 \ 0.61]$, and an ambient color $[1.0 \ 0.7 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
380. Given a point location of $[1.0 \ -1.0 \ 3.0]$ and a light location of $[-1.0 \ 4.0 \ -1.0]$, what is the light direction? (Remember to normalize.)
381. Point p has a surface color of $[1.0 \ 2.5 \ 2.0]$ and a surface normal of $[0.4 \ 0.78 \ 0.48]$. Given a light of color $[1.0 \ 1.0 \ 0.0]$ and direction $[0.32 \ 0.44 \ 0.84]$, what will be the diffuse component of p 's final color?
382. What is the normal to a triangle defined by vertices $[-2.0 \ -1.0 \ 0.0]$, $[-4.0 \ -2.0 \ -5.0]$, and $[-4.0 \ -5.0 \ -5.0]$ (listed in the order of positive rotation)?
383. Given a point location of $[2.0 \ -5.0 \ 3.0]$ and a light location of $[1.0 \ -1.0 \ -3.0]$, what is the light direction? (Remember to normalize.)
384. Point p has a surface color of $[0.3 \ 1.0 \ 0.7]$ and a surface normal of $[0.88 \ 0.3 \ 0.37]$. Given a light of color $[1.0 \ 0.2 \ 0.8]$ and direction $[0.84 \ 0.5 \ 0.21]$, and a view direction $[0.48 \ 0.4 \ 0.78]$, 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 $[0.8 \ 1.0 \ 0.2]$ and a surface normal of $[0.58 \ 0.65 \ 0.49]$. Given a light of color $[1.0 \ 0.0 \ 4.0]$ and direction $[0.0 \ 0.8 \ 0.6]$, a view direction $[0.61 \ 0.54 \ 0.58]$, and an ambient color $[4.0 \ 1.0 \ 3.0]$, what will be p 's final color, with a Phong exponent of 2?
386. Point p has a surface color of $[0.5 \ 2.5 \ 1.0]$ and a surface normal of $[0.48 \ 0.54 \ 0.69]$. Given a light of color $[4.0 \ 3.0 \ 1.0]$ and direction $[0.88 \ 0.3 \ 0.37]$, what will be the diffuse component of p 's final color?

387. Point p has a surface color of $[3.0 \ 1.0 \ 4.0]$ and a surface normal of $[0.2 \ 0.81 \ 0.55]$. Given a light of color $[0.3 \ 1.0 \ 1.7]$ and direction $[0.48 \ 0.69 \ 0.54]$, what will be the diffuse component of p 's final color?
388. Point p has a surface color of $[1.0 \ 1.2 \ 1.2]$ and a surface normal of $[0.23 \ 0.9 \ 0.37]$. Given a light of color $[1.0 \ 1.5 \ 1.5]$ and direction $[0.84 \ 0.21 \ 0.5]$, a view direction $[0.58 \ 0.54 \ 0.61]$, and an ambient color $[1.0 \ 1.7 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
389. What is the normal to a triangle defined by vertices $[-1.0 \ 2.0 \ -4.0]$, $[0.0 \ -3.0 \ -2.0]$, and $[3.0 \ -5.0 \ 2.0]$ (listed in the order of positive rotation)?
390. What is the normal to a triangle defined by vertices $[2.0 \ -4.0 \ -2.0]$, $[3.0 \ 2.0 \ 1.0]$, and $[0.0 \ -1.0 \ -5.0]$ (listed in the order of positive rotation)?
391. What is the normal to a triangle defined by vertices $[0.0 \ -2.0 \ 1.0]$, $[-1.0 \ -3.0 \ 4.0]$, and $[1.0 \ 3.0 \ -4.0]$ (listed in the order of positive rotation)?
392. What is the normal to a triangle defined by vertices $[-4.0 \ -5.0 \ -2.0]$, $[-1.0 \ 4.0 \ 1.0]$, and $[-2.0 \ -3.0 \ -3.0]$ (listed in the order of positive rotation)?
393. Point p has a surface color of $[0.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.48 \ 0.77 \ 0.42]$. Given a light of color $[0.5 \ 1.0 \ 0.2]$ and direction $[0.21 \ 0.78 \ 0.59]$, and a view direction $[0.78 \ 0.59 \ 0.21]$, 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 $[1.7 \ 1.0 \ 1.7]$ and a surface normal of $[0.4 \ 0.48 \ 0.78]$. Given a light of color $[2.5 \ 0.5 \ 1.0]$ and direction $[0.55 \ 0.3 \ 0.78]$, what will be the diffuse component of p 's final color?
395. Point p has a surface color of $[1.0 \ 0.5 \ 0.8]$ and a surface normal of $[0.52 \ 0.37 \ 0.77]$. Given a light of color $[1.3 \ 1.7 \ 1.0]$ and direction $[0.78 \ 0.3 \ 0.55]$, a view direction $[0.58 \ 0.54 \ 0.61]$, and an ambient color $[0.0 \ 1.0 \ 2.0]$, what will be p 's final color, with a Phong exponent of 2?
396. Point p has a surface color of $[1.0 \ 0.7 \ 0.7]$ and a surface normal of $[0.61 \ 0.58 \ 0.54]$. Given a light of color $[1.0 \ 1.0 \ 0.0]$ and direction $[0.48 \ 0.77 \ 0.42]$, what will be the diffuse component of p 's final color?
397. Point p has a surface color of $[1.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.55 \ 0.3 \ 0.78]$. Given a light of color $[0.7 \ 1.0 \ 1.0]$ and direction $[0.65 \ 0.58 \ 0.49]$, a view direction $[0.58 \ 0.54 \ 0.61]$, and an ambient color $[0.8 \ 0.5 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
398. Point p has a surface color of $[1.0 \ 0.5 \ 0.2]$ and a surface normal of $[0.7 \ 0.68 \ 0.22]$. Given a light of color $[0.7 \ 1.0 \ 0.7]$ and direction $[0.49 \ 0.58 \ 0.65]$, what will be the diffuse component of p 's final color?
399. What is the normal to a triangle defined by vertices $[3.0 \ 4.0 \ 2.0]$, $[0.0 \ -2.0 \ -2.0]$, and $[-1.0 \ -5.0 \ -2.0]$ (listed in the order of positive rotation)?
400. What is the normal to a triangle defined by vertices $[-4.0 \ 1.0 \ 3.0]$, $[1.0 \ -5.0 \ 4.0]$, and $[1.0 \ -2.0 \ -5.0]$ (listed in the order of positive rotation)?

401. Point p has a surface color of $[0.0 \ 1.0 \ 4.0]$ and a surface normal of $[0.78 \ 0.59 \ 0.21]$. Given a light of color $[1.7 \ 1.0 \ 0.7]$ and direction $[0.88 \ 0.37 \ 0.3]$, what will be the diffuse component of p 's final color?
402. What is the normal to a triangle defined by vertices $[2.0 \ 1.0 \ 3.0]$, $[0.0 \ 2.0 \ -4.0]$, and $[-1.0 \ -4.0 \ -1.0]$ (listed in the order of positive rotation)?
403. What is the normal to a triangle defined by vertices $[0.0 \ -2.0 \ 1.0]$, $[-3.0 \ -2.0 \ 0.0]$, and $[1.0 \ -5.0 \ -3.0]$ (listed in the order of positive rotation)?
404. Point p has a surface color of $[5.0 \ 1.0 \ 2.0]$ and a surface normal of $[0.3 \ 0.55 \ 0.78]$. Given a light of color $[1.0 \ 1.0 \ 0.0]$ and direction $[0.37 \ 0.77 \ 0.52]$, and a view direction $[0.9 \ 0.37 \ 0.23]$, 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 $[1.0 \ 5.0 \ 1.0]$ and a surface normal of $[0.37 \ 0.77 \ 0.52]$. Given a light of color $[0.7 \ 1.3 \ 1.0]$ and direction $[0.79 \ 0.58 \ 0.2]$, what will be the diffuse component of p 's final color?
406. Point p has a surface color of $[0.3 \ 1.0 \ 1.0]$ and a surface normal of $[0.77 \ 0.48 \ 0.42]$. Given a light of color $[0.0 \ 0.7 \ 1.0]$ and direction $[0.2 \ 0.58 \ 0.79]$, a view direction $[0.84 \ 0.32 \ 0.44]$, and an ambient color $[2.5 \ 1.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
407. Point p has a surface color of $[2.0 \ 1.0 \ 1.5]$ and a surface normal of $[0.59 \ 0.11 \ 0.8]$. Given a light of color $[2.0 \ 1.0 \ 4.0]$ and direction $[0.8 \ 0.6 \ 0.0]$, a view direction $[0.7 \ 0.22 \ 0.68]$, and an ambient color $[1.0 \ 1.0 \ 0.2]$, what will be p 's final color, with a Phong exponent of 2?
408. What is the normal to a triangle defined by vertices $[-1.0 \ 4.0 \ 4.0]$, $[-3.0 \ 3.0 \ -2.0]$, and $[0.0 \ 1.0 \ -3.0]$ (listed in the order of positive rotation)?
409. What is the normal to a triangle defined by vertices $[3.0 \ -4.0 \ -4.0]$, $[-4.0 \ -3.0 \ -2.0]$, and $[-5.0 \ -1.0 \ 2.0]$ (listed in the order of positive rotation)?
410. Point p has a surface color of $[1.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.3 \ 0.78 \ 0.55]$. Given a light of color $[1.0 \ 1.0 \ 1.5]$ and direction $[0.35 \ 0.78 \ 0.52]$, what will be the diffuse component of p 's final color?
411. Given a point location of $[0.0 \ -3.0 \ -2.0]$ and a light location of $[-2.0 \ 2.0 \ 3.0]$, what is the light direction? (Remember to normalize.)
412. Point p has a surface color of $[2.0 \ 2.0 \ 1.0]$ and a surface normal of $[0.5 \ 0.84 \ 0.21]$. Given a light of color $[5.0 \ 1.0 \ 1.0]$ and direction $[0.77 \ 0.52 \ 0.37]$, and a view direction $[0.8 \ 0.6 \ 0.01]$, 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 $[-3.0 \ -4.0 \ -2.0]$, $[-3.0 \ -1.0 \ 3.0]$, and $[3.0 \ 0.0 \ 4.0]$ (listed in the order of positive rotation)?
414. Point p has a surface color of $[2.5 \ 1.0 \ 0.5]$ and a surface normal of $[0.78 \ 0.55 \ 0.3]$. Given a light of color $[0.3 \ 1.0 \ 1.0]$ and direction $[0.21 \ 0.5 \ 0.84]$, and a view direction

- $[0.88 \ 0.3 \ 0.37]$, what will be the specular component of p's final color, with a Phong exponent of 2?
415. Given a point location of $[4.0 \ 2.0 \ -4.0]$ and a light location of $[0.0 \ 1.0 \ 3.0]$, what is the light direction? (Remember to normalize.)
416. Point p has a surface color of $[0.7 \ 0.7 \ 1.0]$ and a surface normal of $[0.84 \ 0.32 \ 0.44]$. Given a light of color $[1.0 \ 1.0 \ 0.3]$ and direction $[0.9 \ 0.23 \ 0.37]$, and a view direction $[0.79 \ 0.58 \ 0.2]$, what will be the specular component of p's final color, with a Phong exponent of 2?
417. Given a point location of $[3.0 \ -5.0 \ -5.0]$ and a light location of $[-1.0 \ 0.0 \ -1.0]$, what is the light direction? (Remember to normalize.)
418. Given a point location of $[4.0 \ -1.0 \ 3.0]$ and a light location of $[-3.0 \ -2.0 \ -3.0]$, what is the light direction? (Remember to normalize.)
419. Point p has a surface color of $[4.0 \ 1.0 \ 2.0]$ and a surface normal of $[0.35 \ 0.52 \ 0.78]$. Given a light of color $[5.0 \ 1.0 \ 5.0]$ and direction $[0.84 \ 0.32 \ 0.44]$, and a view direction $[0.84 \ 0.21 \ 0.5]$, what will be the specular component of p's final color, with a Phong exponent of 2?
420. Given a point location of $[2.0 \ 4.0 \ 2.0]$ and a light location of $[0.0 \ -4.0 \ -5.0]$, what is the light direction? (Remember to normalize.)
421. Point p has a surface color of $[1.2 \ 1.0 \ 1.0]$ and a surface normal of $[0.37 \ 0.23 \ 0.9]$. Given a light of color $[0.5 \ 1.0 \ 1.0]$ and direction $[0.69 \ 0.48 \ 0.54]$, what will be the diffuse component of p's final color?
422. Point p has a surface color of $[0.2 \ 0.0 \ 1.0]$ and a surface normal of $[0.0 \ 0.8 \ 0.6]$. Given a light of color $[1.5 \ 2.5 \ 1.0]$ and direction $[0.59 \ 0.78 \ 0.21]$, what will be the diffuse component of p's final color?
423. Point p has a surface color of $[0.3 \ 1.0 \ 0.3]$ and a surface normal of $[0.54 \ 0.58 \ 0.61]$. Given a light of color $[0.0 \ 1.0 \ 0.0]$ and direction $[0.68 \ 0.22 \ 0.7]$, a view direction $[0.84 \ 0.44 \ 0.32]$, and an ambient color $[0.8 \ 1.0 \ 0.8]$, what will be p's final color, with a Phong exponent of 2?
424. What is the normal to a triangle defined by vertices $[3.0 \ -1.0 \ 2.0]$, $[3.0 \ 0.0 \ 2.0]$, and $[-3.0 \ 1.0 \ -1.0]$ (listed in the order of positive rotation)?
425. What is the normal to a triangle defined by vertices $[-1.0 \ 4.0 \ 1.0]$, $[2.0 \ -3.0 \ -2.0]$, and $[2.0 \ -2.0 \ -5.0]$ (listed in the order of positive rotation)?
426. Point p has a surface color of $[4.0 \ 2.0 \ 1.0]$ and a surface normal of $[0.78 \ 0.4 \ 0.48]$. Given a light of color $[5.0 \ 1.0 \ 2.0]$ and direction $[0.58 \ 0.49 \ 0.65]$, a view direction $[0.68 \ 0.42 \ 0.6]$, and an ambient color $[1.0 \ 1.0 \ 2.0]$, what will be p's final color, with a Phong exponent of 2?
427. Point p has a surface color of $[1.2 \ 1.2 \ 1.0]$ and a surface normal of $[0.37 \ 0.9 \ 0.23]$. Given a light of color $[1.0 \ 1.0 \ 5.0]$ and direction $[0.6 \ 0.01 \ 0.8]$, what will be the diffuse component of p's final color?

428. Given a point location of $[4.0 \ 4.0 \ 2.0]$ and a light location of $[-3.0 \ -3.0 \ 1.0]$, what is the light direction? (Remember to normalize.)
429. Point p has a surface color of $[1.0 \ 3.0 \ 4.0]$ and a surface normal of $[0.8 \ 0.01 \ 0.6]$. Given a light of color $[1.0 \ 0.7 \ 0.7]$ and direction $[0.3 \ 0.55 \ 0.78]$, and a view direction $[0.4 \ 0.78 \ 0.48]$, 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 $[1.0 \ 1.0 \ 0.2]$ and a surface normal of $[0.44 \ 0.84 \ 0.32]$. Given a light of color $[3.0 \ 4.0 \ 1.0]$ and direction $[0.55 \ 0.3 \ 0.78]$, a view direction $[0.52 \ 0.37 \ 0.77]$, and an ambient color $[5.0 \ 0.0 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
431. Given a point location of $[-4.0 \ -1.0 \ 3.0]$ and a light location of $[-4.0 \ 3.0 \ 2.0]$, what is the light direction? (Remember to normalize.)
432. What is the normal to a triangle defined by vertices $[3.0 \ 1.0 \ 1.0]$, $[2.0 \ -4.0 \ 2.0]$, and $[1.0 \ -4.0 \ 2.0]$ (listed in the order of positive rotation)?
433. Point p has a surface color of $[1.0 \ 1.7 \ 1.0]$ and a surface normal of $[0.8 \ 0.6 \ 0.01]$. Given a light of color $[2.0 \ 1.0 \ 0.5]$ and direction $[0.58 \ 0.49 \ 0.65]$, what will be the diffuse component of p's final color?
434. What is the normal to a triangle defined by vertices $[4.0 \ 3.0 \ -3.0]$, $[-1.0 \ -3.0 \ -4.0]$, and $[3.0 \ -2.0 \ -4.0]$ (listed in the order of positive rotation)?
435. Point p has a surface color of $[1.0 \ 1.5 \ 0.5]$ and a surface normal of $[0.55 \ 0.78 \ 0.3]$. Given a light of color $[2.0 \ 1.0 \ 1.0]$ and direction $[0.68 \ 0.6 \ 0.42]$, and a view direction $[0.48 \ 0.78 \ 0.4]$, what will be the specular component of p's final color, with a Phong exponent of 2?
436. Given a point location of $[-5.0 \ -4.0 \ -4.0]$ and a light location of $[-5.0 \ 0.0 \ -2.0]$, what is the light direction? (Remember to normalize.)
437. Point p has a surface color of $[1.7 \ 1.0 \ 0.0]$ and a surface normal of $[0.55 \ 0.3 \ 0.78]$. Given a light of color $[2.5 \ 1.0 \ 2.5]$ and direction $[0.6 \ 0.68 \ 0.42]$, what will be the diffuse component of p's final color?
438. Point p has a surface color of $[1.0 \ 0.5 \ 1.0]$ and a surface normal of $[0.8 \ 0.59 \ 0.11]$. Given a light of color $[1.0 \ 5.0 \ 3.0]$ and direction $[0.88 \ 0.3 \ 0.37]$, a view direction $[0.22 \ 0.87 \ 0.44]$, and an ambient color $[0.0 \ 1.0 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
439. What is the normal to a triangle defined by vertices $[1.0 \ 2.0 \ 2.0]$, $[1.0 \ 2.0 \ 1.0]$, and $[3.0 \ 3.0 \ 0.0]$ (listed in the order of positive rotation)?
440. Point p has a surface color of $[0.5 \ 2.5 \ 1.0]$ and a surface normal of $[0.2 \ 0.81 \ 0.55]$. Given a light of color $[3.0 \ 1.0 \ 4.0]$ and direction $[0.78 \ 0.55 \ 0.3]$, and a view direction $[0.11 \ 0.8 \ 0.59]$, 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 $[1.5 \ 1.0 \ 2.5]$ and a surface normal of $[0.78 \ 0.3 \ 0.55]$. Given a light of color $[1.0 \ 1.5 \ 0.5]$ and direction $[0.59 \ 0.11 \ 0.8]$, a view direction $[0.54 \ 0.48 \ 0.69]$, and an ambient color $[1.0 \ 0.0 \ 4.0]$, what will be p 's final color, with a Phong exponent of 2?
442. Point p has a surface color of $[2.5 \ 1.0 \ 0.5]$ and a surface normal of $[0.69 \ 0.54 \ 0.48]$. Given a light of color $[1.0 \ 0.5 \ 1.5]$ and direction $[0.55 \ 0.2 \ 0.81]$, what will be the diffuse component of p 's final color?
443. Point p has a surface color of $[1.5 \ 1.0 \ 2.5]$ and a surface normal of $[0.2 \ 0.55 \ 0.81]$. Given a light of color $[0.3 \ 0.3 \ 1.0]$ and direction $[0.77 \ 0.42 \ 0.48]$, and a view direction $[0.2 \ 0.58 \ 0.79]$, 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 $[-3.0 \ -1.0 \ 1.0]$, $[-5.0 \ 3.0 \ 1.0]$, and $[-5.0 \ 3.0 \ -2.0]$ (listed in the order of positive rotation)?
445. What is the normal to a triangle defined by vertices $[0.0 \ -1.0 \ -3.0]$, $[4.0 \ -1.0 \ -2.0]$, and $[-2.0 \ -1.0 \ -2.0]$ (listed in the order of positive rotation)?
446. Point p has a surface color of $[0.7 \ 0.3 \ 1.0]$ and a surface normal of $[0.8 \ 0.6 \ 0.01]$. Given a light of color $[1.0 \ 1.0 \ 0.5]$ and direction $[0.81 \ 0.55 \ 0.2]$, and a view direction $[0.48 \ 0.42 \ 0.77]$, 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 $[1.0 \ 1.3 \ 1.3]$ and a surface normal of $[0.35 \ 0.78 \ 0.52]$. Given a light of color $[0.7 \ 1.7 \ 1.0]$ and direction $[0.22 \ 0.7 \ 0.68]$, and a view direction $[0.52 \ 0.35 \ 0.78]$, what will be the specular component of p 's final color, with a Phong exponent of 2?
448. Given a point location of $[3.0 \ 0.0 \ -5.0]$ and a light location of $[-2.0 \ -1.0 \ -4.0]$, what is the light direction? (Remember to normalize.)
449. Point p has a surface color of $[1.7 \ 1.0 \ 0.7]$ and a surface normal of $[0.52 \ 0.35 \ 0.78]$. Given a light of color $[1.0 \ 0.5 \ 0.2]$ and direction $[0.11 \ 0.59 \ 0.8]$, and a view direction $[0.2 \ 0.58 \ 0.79]$, 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 $[1.0 \ 0.5 \ 1.0]$ and a surface normal of $[0.68 \ 0.7 \ 0.22]$. Given a light of color $[4.0 \ 1.0 \ 2.0]$ and direction $[0.78 \ 0.52 \ 0.35]$, a view direction $[0.3 \ 0.55 \ 0.78]$, and an ambient color $[1.0 \ 1.0 \ 2.0]$, what will be p 's final color, with a Phong exponent of 2?
451. What is the normal to a triangle defined by vertices $[1.0 \ -5.0 \ -4.0]$, $[0.0 \ 0.0 \ -4.0]$, and $[-1.0 \ -2.0 \ -2.0]$ (listed in the order of positive rotation)?
452. What is the normal to a triangle defined by vertices $[-2.0 \ 0.0 \ -1.0]$, $[-3.0 \ -4.0 \ 3.0]$, and $[2.0 \ -2.0 \ -2.0]$ (listed in the order of positive rotation)?
453. Point p has a surface color of $[0.5 \ 1.0 \ 0.0]$ and a surface normal of $[0.42 \ 0.48 \ 0.77]$. Given a light of color $[1.0 \ 1.0 \ 0.0]$ and direction $[0.6 \ 0.8 \ 0.0]$, and a view direction $[0.8 \ 0.6 \ 0.01]$, 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 $[1.0 \ 4.0 \ 3.0]$ and a surface normal of $[0.37 \ 0.88 \ 0.3]$. Given a light of color $[2.0 \ 1.0 \ 3.0]$ and direction $[0.54 \ 0.48 \ 0.69]$, what will be the diffuse component of p's final color?
455. Point p has a surface color of $[1.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.55 \ 0.3 \ 0.78]$. Given a light of color $[1.0 \ 0.2 \ 1.0]$ and direction $[0.58 \ 0.79 \ 0.2]$, a view direction $[0.11 \ 0.8 \ 0.59]$, and an ambient color $[0.0 \ 5.0 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
456. Point p has a surface color of $[2.0 \ 0.0 \ 1.0]$ and a surface normal of $[0.42 \ 0.68 \ 0.6]$. Given a light of color $[1.0 \ 2.5 \ 1.0]$ and direction $[0.6 \ 0.8 \ 0.01]$, what will be the diffuse component of p's final color?
457. Point p has a surface color of $[5.0 \ 1.0 \ 0.0]$ and a surface normal of $[0.22 \ 0.7 \ 0.68]$. Given a light of color $[1.0 \ 0.5 \ 0.8]$ and direction $[0.37 \ 0.3 \ 0.88]$, what will be the diffuse component of p's final color?
458. Point p has a surface color of $[1.0 \ 0.5 \ 1.0]$ and a surface normal of $[0.0 \ 0.6 \ 0.8]$. Given a light of color $[1.0 \ 1.0 \ 0.8]$ and direction $[0.68 \ 0.42 \ 0.6]$, a view direction $[0.48 \ 0.78 \ 0.4]$, and an ambient color $[0.5 \ 2.5 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
459. Given a point location of $[-1.0 \ -2.0 \ 4.0]$ and a light location of $[-4.0 \ 0.0 \ -1.0]$, what is the light direction? (Remember to normalize.)
460. Point p has a surface color of $[0.0 \ 1.2 \ 1.0]$ and a surface normal of $[0.48 \ 0.77 \ 0.42]$. Given a light of color $[1.0 \ 1.0 \ 0.3]$ and direction $[0.79 \ 0.2 \ 0.58]$, what will be the diffuse component of p's final color?
461. Point p has a surface color of $[0.0 \ 3.0 \ 1.0]$ and a surface normal of $[0.42 \ 0.77 \ 0.48]$. Given a light of color $[1.0 \ 0.5 \ 1.0]$ and direction $[0.37 \ 0.3 \ 0.88]$, what will be the diffuse component of p's final color?
462. Point p has a surface color of $[2.0 \ 1.0 \ 5.0]$ and a surface normal of $[0.49 \ 0.58 \ 0.65]$. Given a light of color $[1.0 \ 0.7 \ 1.0]$ and direction $[0.54 \ 0.69 \ 0.48]$, a view direction $[0.48 \ 0.4 \ 0.78]$, and an ambient color $[0.0 \ 1.0 \ 0.0]$, what will be p's final color, with a Phong exponent of 2?
463. Given a point location of $[-2.0 \ -5.0 \ 2.0]$ and a light location of $[-1.0 \ 4.0 \ 2.0]$, what is the light direction? (Remember to normalize.)
464. Point p has a surface color of $[1.0 \ 0.5 \ 1.0]$ and a surface normal of $[0.58 \ 0.2 \ 0.79]$. Given a light of color $[4.0 \ 5.0 \ 1.0]$ and direction $[0.78 \ 0.52 \ 0.35]$, a view direction $[0.54 \ 0.58 \ 0.61]$, and an ambient color $[5.0 \ 1.0 \ 0.0]$, what will be p's final color, with a Phong exponent of 2?
465. Point p has a surface color of $[1.5 \ 0.5 \ 1.0]$ and a surface normal of $[0.81 \ 0.55 \ 0.2]$. Given a light of color $[0.0 \ 1.0 \ 1.0]$ and direction $[0.58 \ 0.54 \ 0.61]$, and a view direction $[0.54 \ 0.58 \ 0.61]$, what will be the specular component of p's final color, with a Phong exponent of 2?
466. Given a point location of $[-4.0 \ -5.0 \ 2.0]$ and a light location of $[-3.0 \ -4.0 \ 4.0]$, what is the light direction? (Remember to normalize.)

467. Point p has a surface color of $[0.5 \ 1.0 \ 0.0]$ and a surface normal of $[0.2 \ 0.58 \ 0.79]$. Given a light of color $[1.0 \ 0.5 \ 0.0]$ and direction $[0.5 \ 0.21 \ 0.84]$, a view direction $[0.48 \ 0.42 \ 0.77]$, and an ambient color $[1.0 \ 0.5 \ 2.5]$, what will be p's final color, with a Phong exponent of 2?
468. What is the normal to a triangle defined by vertices $[-1.0 \ -5.0 \ -2.0]$, $[2.0 \ 2.0 \ -2.0]$, and $[-3.0 \ 2.0 \ 3.0]$ (listed in the order of positive rotation)?
469. Point p has a surface color of $[2.5 \ 1.0 \ 1.5]$ and a surface normal of $[0.58 \ 0.2 \ 0.79]$. Given a light of color $[1.0 \ 1.0 \ 1.0]$ and direction $[0.59 \ 0.11 \ 0.8]$, what will be the diffuse component of p's final color?
470. Given a point location of $[3.0 \ 2.0 \ 4.0]$ and a light location of $[-4.0 \ -3.0 \ -3.0]$, what is the light direction? (Remember to normalize.)
471. Given a point location of $[-1.0 \ -1.0 \ -3.0]$ and a light location of $[0.0 \ 4.0 \ 1.0]$, what is the light direction? (Remember to normalize.)
472. What is the normal to a triangle defined by vertices $[-1.0 \ 3.0 \ 0.0]$, $[-2.0 \ -4.0 \ -4.0]$, and $[0.0 \ -5.0 \ 3.0]$ (listed in the order of positive rotation)?
473. Given a point location of $[-1.0 \ 0.0 \ 1.0]$ and a light location of $[-1.0 \ -4.0 \ -3.0]$, what is the light direction? (Remember to normalize.)
474. Point p has a surface color of $[0.2 \ 1.0 \ 0.0]$ and a surface normal of $[0.87 \ 0.44 \ 0.22]$. Given a light of color $[1.5 \ 2.5 \ 1.0]$ and direction $[0.2 \ 0.81 \ 0.55]$, a view direction $[0.84 \ 0.5 \ 0.21]$, and an ambient color $[0.0 \ 0.7 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
475. Point p has a surface color of $[0.0 \ 1.0 \ 2.0]$ and a surface normal of $[0.42 \ 0.6 \ 0.68]$. Given a light of color $[0.0 \ 1.0 \ 2.0]$ and direction $[0.79 \ 0.2 \ 0.58]$, what will be the diffuse component of p's final color?
476. What is the normal to a triangle defined by vertices $[-4.0 \ 2.0 \ -1.0]$, $[0.0 \ -2.0 \ 1.0]$, and $[-4.0 \ 3.0 \ -2.0]$ (listed in the order of positive rotation)?
477. Given a point location of $[0.0 \ -4.0 \ 0.0]$ and a light location of $[-5.0 \ -5.0 \ -5.0]$, what is the light direction? (Remember to normalize.)
478. Given a point location of $[-5.0 \ -2.0 \ -5.0]$ and a light location of $[4.0 \ -1.0 \ 4.0]$, what is the light direction? (Remember to normalize.)
479. Given a point location of $[-2.0 \ 4.0 \ 3.0]$ and a light location of $[-1.0 \ -3.0 \ 0.0]$, what is the light direction? (Remember to normalize.)
480. Point p has a surface color of $[0.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.81 \ 0.55 \ 0.2]$. Given a light of color $[0.0 \ 2.0 \ 1.0]$ and direction $[0.68 \ 0.6 \ 0.42]$, a view direction $[0.37 \ 0.77 \ 0.52]$, and an ambient color $[1.0 \ 5.0 \ 2.0]$, what will be p's final color, with a Phong exponent of 2?
481. Given a point location of $[0.0 \ 3.0 \ -2.0]$ and a light location of $[3.0 \ 3.0 \ 3.0]$, what is the light direction? (Remember to normalize.)

482. Point p has a surface color of $[0.3 \ 1.0 \ 0.3]$ and a surface normal of $[0.44 \ 0.87 \ 0.22]$. Given a light of color $[0.5 \ 2.0 \ 1.0]$ and direction $[0.61 \ 0.58 \ 0.54]$, a view direction $[0.21 \ 0.59 \ 0.78]$, and an ambient color $[1.0 \ 3.0 \ 2.0]$, what will be p 's final color, with a Phong exponent of 2?
483. Point p has a surface color of $[1.0 \ 3.0 \ 0.0]$ and a surface normal of $[0.9 \ 0.37 \ 0.23]$. Given a light of color $[2.0 \ 0.0 \ 1.0]$ and direction $[0.58 \ 0.2 \ 0.79]$, and a view direction $[0.9 \ 0.23 \ 0.37]$, what will be the specular component of p 's final color, with a Phong exponent of 2?
484. Given a point location of $[0.0 \ 2.0 \ 0.0]$ and a light location of $[-4.0 \ -4.0 \ 2.0]$, what is the light direction? (Remember to normalize.)
485. Point p has a surface color of $[1.0 \ 3.0 \ 1.0]$ and a surface normal of $[0.49 \ 0.65 \ 0.58]$. Given a light of color $[1.0 \ 0.0 \ 1.0]$ and direction $[0.23 \ 0.37 \ 0.9]$, what will be the diffuse component of p 's final color?
486. What is the normal to a triangle defined by vertices $[4.0 \ -1.0 \ 4.0]$, $[-4.0 \ -3.0 \ 0.0]$, and $[0.0 \ -4.0 \ 3.0]$ (listed in the order of positive rotation)?
487. Point p has a surface color of $[1.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.48 \ 0.4 \ 0.78]$. Given a light of color $[2.0 \ 0.0 \ 1.0]$ and direction $[0.58 \ 0.65 \ 0.49]$, a view direction $[0.59 \ 0.21 \ 0.78]$, and an ambient color $[1.0 \ 3.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
488. Point p has a surface color of $[0.0 \ 2.0 \ 1.0]$ and a surface normal of $[0.48 \ 0.77 \ 0.42]$. Given a light of color $[1.0 \ 0.5 \ 1.0]$ and direction $[0.54 \ 0.48 \ 0.69]$, what will be the diffuse component of p 's final color?
489. What is the normal to a triangle defined by vertices $[-1.0 \ -2.0 \ -2.0]$, $[1.0 \ -3.0 \ 0.0]$, and $[-4.0 \ -1.0 \ 0.0]$ (listed in the order of positive rotation)?
490. Given a point location of $[-1.0 \ -2.0 \ -2.0]$ and a light location of $[3.0 \ 3.0 \ 4.0]$, what is the light direction? (Remember to normalize.)
491. Point p has a surface color of $[1.5 \ 1.0 \ 1.5]$ and a surface normal of $[0.5 \ 0.84 \ 0.21]$. Given a light of color $[0.7 \ 1.0 \ 1.0]$ and direction $[0.8 \ 0.0 \ 0.6]$, a view direction $[0.61 \ 0.54 \ 0.58]$, and an ambient color $[1.0 \ 1.3 \ 0.3]$, what will be p 's final color, with a Phong exponent of 2?
492. Point p has a surface color of $[1.0 \ 0.0 \ 0.5]$ and a surface normal of $[0.55 \ 0.2 \ 0.81]$. Given a light of color $[1.0 \ 1.0 \ 3.0]$ and direction $[0.3 \ 0.55 \ 0.78]$, and a view direction $[0.77 \ 0.42 \ 0.48]$, 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 $[0.8 \ 1.0 \ 1.0]$ and a surface normal of $[0.88 \ 0.3 \ 0.37]$. Given a light of color $[2.0 \ 3.0 \ 1.0]$ and direction $[0.11 \ 0.59 \ 0.8]$, and a view direction $[0.55 \ 0.78 \ 0.3]$, 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 $[4.0 \ 0.0 \ -3.0]$, $[-5.0 \ 2.0 \ 1.0]$, and $[0.0 \ -2.0 \ -4.0]$ (listed in the order of positive rotation)?

495. Point p has a surface color of $[1.0 \ 5.0 \ 2.0]$ and a surface normal of $[0.23 \ 0.9 \ 0.37]$. Given a light of color $[1.0 \ 5.0 \ 4.0]$ and direction $[0.54 \ 0.69 \ 0.48]$, a view direction $[0.52 \ 0.78 \ 0.35]$, and an ambient color $[1.0 \ 0.5 \ 0.8]$, what will be p's final color, with a Phong exponent of 2?
496. Point p has a surface color of $[0.3 \ 0.3 \ 1.0]$ and a surface normal of $[0.35 \ 0.78 \ 0.52]$. Given a light of color $[4.0 \ 2.0 \ 1.0]$ and direction $[0.81 \ 0.2 \ 0.55]$, and a view direction $[0.48 \ 0.54 \ 0.69]$, 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 $[1.2 \ 0.5 \ 1.0]$ and a surface normal of $[0.52 \ 0.78 \ 0.35]$. Given a light of color $[1.0 \ 0.2 \ 0.0]$ and direction $[0.7 \ 0.22 \ 0.68]$, what will be the diffuse component of p's final color?
498. Point p has a surface color of $[1.0 \ 0.5 \ 1.0]$ and a surface normal of $[0.6 \ 0.8 \ 0.01]$. Given a light of color $[0.0 \ 0.7 \ 1.0]$ and direction $[0.78 \ 0.52 \ 0.35]$, what will be the diffuse component of p's final color?
499. What is the normal to a triangle defined by vertices $[1.0 \ 2.0 \ 1.0]$, $[-3.0 \ 3.0 \ 4.0]$, and $[4.0 \ 3.0 \ -1.0]$ (listed in the order of positive rotation)?
500. Point p has a surface color of $[4.0 \ 0.0 \ 1.0]$ and a surface normal of $[0.6 \ 0.0 \ 0.8]$. Given a light of color $[1.3 \ 1.0 \ 0.3]$ and direction $[0.42 \ 0.68 \ 0.6]$, a view direction $[0.77 \ 0.42 \ 0.48]$, and an ambient color $[0.5 \ 0.5 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
501. Point p has a surface color of $[0.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.78 \ 0.55 \ 0.3]$. Given a light of color $[1.0 \ 1.0 \ 1.3]$ and direction $[0.37 \ 0.9 \ 0.23]$, a view direction $[0.78 \ 0.48 \ 0.4]$, and an ambient color $[1.0 \ 4.0 \ 5.0]$, what will be p's final color, with a Phong exponent of 2?
502. What is the normal to a triangle defined by vertices $[2.0 \ -1.0 \ 1.0]$, $[2.0 \ 3.0 \ 2.0]$, and $[-2.0 \ -4.0 \ 0.0]$ (listed in the order of positive rotation)?
503. Point p has a surface color of $[1.0 \ 0.5 \ 1.0]$ and a surface normal of $[0.8 \ 0.6 \ 0.01]$. Given a light of color $[1.0 \ 1.0 \ 0.5]$ and direction $[0.9 \ 0.23 \ 0.37]$, a view direction $[0.77 \ 0.52 \ 0.37]$, and an ambient color $[0.0 \ 1.0 \ 0.5]$, what will be p's final color, with a Phong exponent of 2?
504. Point p has a surface color of $[0.0 \ 1.0 \ 4.0]$ and a surface normal of $[0.77 \ 0.42 \ 0.48]$. Given a light of color $[2.0 \ 0.5 \ 1.0]$ and direction $[0.49 \ 0.58 \ 0.65]$, a view direction $[0.23 \ 0.9 \ 0.37]$, and an ambient color $[1.0 \ 1.0 \ 1.3]$, what will be p's final color, with a Phong exponent of 2?
505. Point p has a surface color of $[1.0 \ 2.5 \ 0.0]$ and a surface normal of $[0.23 \ 0.9 \ 0.37]$. Given a light of color $[1.3 \ 1.0 \ 1.7]$ and direction $[0.8 \ 0.59 \ 0.11]$, a view direction $[0.79 \ 0.2 \ 0.58]$, and an ambient color $[1.0 \ 1.7 \ 0.7]$, what will be p's final color, with a Phong exponent of 2?
506. Point p has a surface color of $[1.0 \ 2.0 \ 1.0]$ and a surface normal of $[0.32 \ 0.84 \ 0.44]$. Given a light of color $[5.0 \ 1.0 \ 2.0]$ and direction $[0.49 \ 0.65 \ 0.58]$, what will be the diffuse component of p's final color?

507. What is the normal to a triangle defined by vertices $[2.0 \ 2.0 \ 0.0]$, $[2.0 \ 0.0 \ 0.0]$, and $[-2.0 \ 4.0 \ 2.0]$ (listed in the order of positive rotation)?
508. Point p has a surface color of $[1.0 \ 1.0 \ 0.8]$ and a surface normal of $[0.48 \ 0.69 \ 0.54]$. Given a light of color $[1.0 \ 1.0 \ 1.0]$ and direction $[0.23 \ 0.9 \ 0.37]$, and a view direction $[0.6 \ 0.68 \ 0.42]$, 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 $[4.0 \ 4.0 \ -4.0]$, $[2.0 \ -1.0 \ 0.0]$, and $[-5.0 \ -1.0 \ 3.0]$ (listed in the order of positive rotation)?
510. Point p has a surface color of $[1.0 \ 1.0 \ 1.7]$ and a surface normal of $[0.7 \ 0.68 \ 0.22]$. Given a light of color $[1.7 \ 1.3 \ 1.0]$ and direction $[0.37 \ 0.77 \ 0.52]$, a view direction $[0.48 \ 0.78 \ 0.4]$, and an ambient color $[1.0 \ 0.2 \ 0.5]$, what will be p's final color, with a Phong exponent of 2?
511. Point p has a surface color of $[2.0 \ 1.0 \ 0.0]$ and a surface normal of $[0.7 \ 0.22 \ 0.68]$. Given a light of color $[4.0 \ 1.0 \ 2.0]$ and direction $[0.44 \ 0.32 \ 0.84]$, a view direction $[0.6 \ 0.8 \ 0.0]$, and an ambient color $[0.3 \ 0.7 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
512. Point p has a surface color of $[1.0 \ 1.0 \ 1.3]$ and a surface normal of $[0.58 \ 0.61 \ 0.54]$. Given a light of color $[2.0 \ 1.0 \ 1.0]$ and direction $[0.68 \ 0.42 \ 0.6]$, what will be the diffuse component of p's final color?
513. Point p has a surface color of $[4.0 \ 5.0 \ 1.0]$ and a surface normal of $[0.81 \ 0.2 \ 0.55]$. Given a light of color $[1.0 \ 1.0 \ 2.5]$ and direction $[0.78 \ 0.52 \ 0.35]$, a view direction $[0.78 \ 0.4 \ 0.48]$, and an ambient color $[0.0 \ 1.0 \ 1.5]$, what will be p's final color, with a Phong exponent of 2?
514. Point p has a surface color of $[0.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.58 \ 0.61 \ 0.54]$. Given a light of color $[1.0 \ 1.0 \ 2.0]$ and direction $[0.55 \ 0.3 \ 0.78]$, what will be the diffuse component of p's final color?
515. Given a point location of $[-3.0 \ 4.0 \ 0.0]$ and a light location of $[0.0 \ 3.0 \ -3.0]$, what is the light direction? (Remember to normalize.)
516. Point p has a surface color of $[0.0 \ 1.0 \ 3.0]$ and a surface normal of $[0.61 \ 0.58 \ 0.54]$. Given a light of color $[1.0 \ 1.0 \ 3.0]$ and direction $[0.54 \ 0.61 \ 0.58]$, what will be the diffuse component of p's final color?
517. Point p has a surface color of $[3.0 \ 3.0 \ 1.0]$ and a surface normal of $[0.37 \ 0.23 \ 0.9]$. Given a light of color $[0.0 \ 1.0 \ 0.5]$ and direction $[0.59 \ 0.78 \ 0.21]$, what will be the diffuse component of p's final color?
518. Point p has a surface color of $[0.7 \ 1.0 \ 0.0]$ and a surface normal of $[0.42 \ 0.48 \ 0.77]$. Given a light of color $[0.7 \ 1.0 \ 1.0]$ and direction $[0.48 \ 0.54 \ 0.69]$, and a view direction $[0.54 \ 0.69 \ 0.48]$, 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 $[0.0 \ 3.0 \ 4.0]$, $[-4.0 \ -5.0 \ -5.0]$, and $[0.0 \ -1.0 \ -4.0]$ (listed in the order of positive rotation)?

520. Point p has a surface color of $[0.0 \ 1.0 \ 1.5]$ and a surface normal of $[0.35 \ 0.78 \ 0.52]$. Given a light of color $[0.5 \ 0.2 \ 1.0]$ and direction $[0.58 \ 0.79 \ 0.2]$, a view direction $[0.44 \ 0.22 \ 0.87]$, and an ambient color $[0.3 \ 1.0 \ 0.3]$, what will be p 's final color, with a Phong exponent of 2?
521. Point p has a surface color of $[1.0 \ 0.3 \ 0.3]$ and a surface normal of $[0.87 \ 0.44 \ 0.22]$. Given a light of color $[0.3 \ 1.0 \ 1.3]$ and direction $[0.55 \ 0.3 \ 0.78]$, a view direction $[0.37 \ 0.9 \ 0.23]$, and an ambient color $[1.0 \ 5.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
522. Point p has a surface color of $[0.5 \ 0.2 \ 1.0]$ and a surface normal of $[0.81 \ 0.55 \ 0.2]$. Given a light of color $[1.0 \ 0.7 \ 1.3]$ and direction $[0.2 \ 0.55 \ 0.81]$, a view direction $[0.44 \ 0.22 \ 0.87]$, and an ambient color $[1.0 \ 1.2 \ 0.8]$, what will be p 's final color, with a Phong exponent of 2?
523. What is the normal to a triangle defined by vertices $[-4.0 \ 3.0 \ 1.0]$, $[1.0 \ 2.0 \ 4.0]$, and $[-1.0 \ -3.0 \ 3.0]$ (listed in the order of positive rotation)?
524. Given a point location of $[-1.0 \ 0.0 \ -1.0]$ and a light location of $[-3.0 \ -4.0 \ 4.0]$, what is the light direction? (Remember to normalize.)
525. Point p has a surface color of $[1.0 \ 0.7 \ 0.3]$ and a surface normal of $[0.48 \ 0.78 \ 0.4]$. Given a light of color $[1.0 \ 0.3 \ 0.7]$ and direction $[0.81 \ 0.55 \ 0.2]$, a view direction $[0.55 \ 0.81 \ 0.2]$, and an ambient color $[1.0 \ 1.0 \ 0.0]$, what will be p 's final color, with a Phong exponent of 2?
526. Point p has a surface color of $[0.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.3 \ 0.78 \ 0.55]$. Given a light of color $[4.0 \ 1.0 \ 5.0]$ and direction $[0.44 \ 0.87 \ 0.22]$, and a view direction $[0.77 \ 0.42 \ 0.48]$, 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 $[1.0 \ 4.0 \ 4.0]$ and a surface normal of $[0.8 \ 0.11 \ 0.59]$. Given a light of color $[0.0 \ 0.2 \ 1.0]$ and direction $[0.4 \ 0.48 \ 0.78]$, what will be the diffuse component of p 's final color?
528. Point p has a surface color of $[1.0 \ 1.0 \ 2.0]$ and a surface normal of $[0.84 \ 0.21 \ 0.5]$. Given a light of color $[1.0 \ 1.3 \ 1.3]$ and direction $[0.54 \ 0.69 \ 0.48]$, what will be the diffuse component of p 's final color?
529. Point p has a surface color of $[0.0 \ 0.3 \ 1.0]$ and a surface normal of $[0.4 \ 0.48 \ 0.78]$. Given a light of color $[1.0 \ 0.3 \ 0.3]$ and direction $[0.84 \ 0.32 \ 0.44]$, what will be the diffuse component of p 's final color?
530. Point p has a surface color of $[1.5 \ 0.5 \ 1.0]$ and a surface normal of $[0.52 \ 0.78 \ 0.35]$. Given a light of color $[1.3 \ 0.7 \ 1.0]$ and direction $[0.84 \ 0.21 \ 0.5]$, and a view direction $[0.5 \ 0.84 \ 0.21]$, what will be the specular component of p 's final color, with a Phong exponent of 2?
531. Given a point location of $[-3.0 \ 0.0 \ 3.0]$ and a light location of $[0.0 \ 3.0 \ -5.0]$, what is the light direction? (Remember to normalize.)
532. Given a point location of $[-4.0 \ -3.0 \ -4.0]$ and a light location of $[4.0 \ 1.0 \ -3.0]$, what is the light direction? (Remember to normalize.)

533. Point p has a surface color of $[2.0 \ 0.0 \ 1.0]$ and a surface normal of $[0.59 \ 0.78 \ 0.21]$. Given a light of color $[3.0 \ 2.0 \ 1.0]$ and direction $[0.49 \ 0.58 \ 0.65]$, and a view direction $[0.0 \ 0.6 \ 0.8]$, 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 $[2.0 \ 2.5 \ 1.0]$ and a surface normal of $[0.88 \ 0.37 \ 0.3]$. Given a light of color $[1.0 \ 1.0 \ 0.5]$ and direction $[0.49 \ 0.65 \ 0.58]$, what will be the diffuse component of p 's final color?
535. What is the normal to a triangle defined by vertices $[3.0 \ -5.0 \ 0.0]$, $[1.0 \ -1.0 \ 4.0]$, and $[-3.0 \ 1.0 \ 4.0]$ (listed in the order of positive rotation)?
536. Point p has a surface color of $[1.0 \ 2.5 \ 1.0]$ and a surface normal of $[0.9 \ 0.37 \ 0.23]$. Given a light of color $[1.0 \ 0.0 \ 5.0]$ and direction $[0.61 \ 0.58 \ 0.54]$, a view direction $[0.2 \ 0.81 \ 0.55]$, and an ambient color $[1.0 \ 0.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
537. What is the normal to a triangle defined by vertices $[-1.0 \ 3.0 \ 2.0]$, $[-3.0 \ 3.0 \ 0.0]$, and $[-2.0 \ -5.0 \ 0.0]$ (listed in the order of positive rotation)?
538. Point p has a surface color of $[3.0 \ 3.0 \ 1.0]$ and a surface normal of $[0.48 \ 0.77 \ 0.42]$. Given a light of color $[2.0 \ 0.5 \ 1.0]$ and direction $[0.6 \ 0.01 \ 0.8]$, what will be the diffuse component of p 's final color?
539. What is the normal to a triangle defined by vertices $[-3.0 \ -4.0 \ -5.0]$, $[-3.0 \ -5.0 \ 4.0]$, and $[-5.0 \ 1.0 \ 3.0]$ (listed in the order of positive rotation)?
540. Point p has a surface color of $[0.5 \ 0.8 \ 1.0]$ and a surface normal of $[0.48 \ 0.4 \ 0.78]$. Given a light of color $[1.0 \ 2.0 \ 0.0]$ and direction $[0.2 \ 0.81 \ 0.55]$, and a view direction $[0.8 \ 0.59 \ 0.11]$, 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 $[1.0 \ 1.0 \ 0.8]$ and a surface normal of $[0.52 \ 0.78 \ 0.35]$. Given a light of color $[1.0 \ 1.0 \ 0.7]$ and direction $[0.22 \ 0.44 \ 0.87]$, a view direction $[0.22 \ 0.44 \ 0.87]$, and an ambient color $[1.2 \ 1.0 \ 0.8]$, what will be p 's final color, with a Phong exponent of 2?
542. Given a point location of $[0.0 \ -2.0 \ -1.0]$ and a light location of $[-4.0 \ -3.0 \ -5.0]$, what is the light direction? (Remember to normalize.)
543. Point p has a surface color of $[1.2 \ 0.8 \ 1.0]$ and a surface normal of $[0.44 \ 0.87 \ 0.22]$. Given a light of color $[5.0 \ 4.0 \ 1.0]$ and direction $[0.59 \ 0.21 \ 0.78]$, a view direction $[0.55 \ 0.2 \ 0.81]$, and an ambient color $[1.2 \ 1.0 \ 0.2]$, what will be p 's final color, with a Phong exponent of 2?
544. Point p has a surface color of $[0.0 \ 3.0 \ 1.0]$ and a surface normal of $[0.55 \ 0.78 \ 0.3]$. Given a light of color $[3.0 \ 1.0 \ 1.0]$ and direction $[0.59 \ 0.8 \ 0.11]$, a view direction $[0.7 \ 0.22 \ 0.68]$, and an ambient color $[0.8 \ 1.0 \ 0.5]$, what will be p 's final color, with a Phong exponent of 2?
545. Point p has a surface color of $[1.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.6 \ 0.0 \ 0.8]$. Given a light of color $[3.0 \ 5.0 \ 1.0]$ and direction $[0.8 \ 0.11 \ 0.59]$, what will be the diffuse component of p 's final color?

546. Point p has a surface color of $[1.0 \ 0.5 \ 1.0]$ and a surface normal of $[0.6 \ 0.8 \ 0.0]$. Given a light of color $[0.3 \ 1.7 \ 1.0]$ and direction $[0.9 \ 0.37 \ 0.23]$, what will be the diffuse component of p 's final color?
547. Point p has a surface color of $[1.0 \ 2.0 \ 0.0]$ and a surface normal of $[0.01 \ 0.6 \ 0.8]$. Given a light of color $[0.7 \ 1.0 \ 0.3]$ and direction $[0.87 \ 0.44 \ 0.22]$, a view direction $[0.4 \ 0.78 \ 0.48]$, and an ambient color $[0.3 \ 1.0 \ 0.0]$, what will be p 's final color, with a Phong exponent of 2?
548. Point p has a surface color of $[0.2 \ 0.8 \ 1.0]$ and a surface normal of $[0.87 \ 0.44 \ 0.22]$. Given a light of color $[2.0 \ 1.0 \ 1.0]$ and direction $[0.32 \ 0.84 \ 0.44]$, what will be the diffuse component of p 's final color?
549. Point p has a surface color of $[2.0 \ 2.0 \ 1.0]$ and a surface normal of $[0.21 \ 0.5 \ 0.84]$. Given a light of color $[1.0 \ 0.7 \ 0.3]$ and direction $[0.78 \ 0.21 \ 0.59]$, what will be the diffuse component of p 's final color?
550. What is the normal to a triangle defined by vertices $[0.0 \ -1.0 \ 0.0]$, $[1.0 \ 2.0 \ -1.0]$, and $[-5.0 \ 3.0 \ 3.0]$ (listed in the order of positive rotation)?
551. Point p has a surface color of $[0.2 \ 0.2 \ 1.0]$ and a surface normal of $[0.2 \ 0.58 \ 0.79]$. Given a light of color $[2.0 \ 1.0 \ 1.0]$ and direction $[0.6 \ 0.8 \ 0.01]$, and a view direction $[0.78 \ 0.59 \ 0.21]$, 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 $[-4.0 \ -3.0 \ -2.0]$, $[2.0 \ 0.0 \ 0.0]$, and $[4.0 \ 4.0 \ -4.0]$ (listed in the order of positive rotation)?
553. Point p has a surface color of $[2.0 \ 1.0 \ 5.0]$ and a surface normal of $[0.8 \ 0.6 \ 0.01]$. Given a light of color $[0.3 \ 0.0 \ 1.0]$ and direction $[0.77 \ 0.37 \ 0.52]$, what will be the diffuse component of p 's final color?
554. Given a point location of $[-3.0 \ 2.0 \ 2.0]$ and a light location of $[4.0 \ -5.0 \ -2.0]$, what is the light direction? (Remember to normalize.)
555. Point p has a surface color of $[1.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.42 \ 0.77 \ 0.48]$. Given a light of color $[1.0 \ 1.0 \ 1.2]$ and direction $[0.77 \ 0.52 \ 0.37]$, a view direction $[0.54 \ 0.61 \ 0.58]$, and an ambient color $[0.5 \ 0.5 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
556. Point p has a surface color of $[0.7 \ 1.3 \ 1.0]$ and a surface normal of $[0.5 \ 0.21 \ 0.84]$. Given a light of color $[0.5 \ 1.0 \ 2.5]$ and direction $[0.0 \ 0.6 \ 0.8]$, and a view direction $[0.87 \ 0.22 \ 0.44]$, 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 $[2.0 \ 0.0 \ 3.0]$, $[1.0 \ 3.0 \ 3.0]$, and $[-5.0 \ -1.0 \ 4.0]$ (listed in the order of positive rotation)?
558. What is the normal to a triangle defined by vertices $[1.0 \ 3.0 \ -2.0]$, $[-2.0 \ -5.0 \ 4.0]$, and $[4.0 \ -3.0 \ 3.0]$ (listed in the order of positive rotation)?

559. Point p has a surface color of $[1.0 \ 2.0 \ 1.0]$ and a surface normal of $[0.54 \ 0.58 \ 0.61]$. Given a light of color $[1.0 \ 0.2 \ 1.0]$ and direction $[0.77 \ 0.42 \ 0.48]$, and a view direction $[0.58 \ 0.79 \ 0.2]$, 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 $[-1.0 \ -3.0 \ -5.0]$, $[-5.0 \ 3.0 \ -5.0]$, and $[-3.0 \ 1.0 \ -5.0]$ (listed in the order of positive rotation)?
561. Point p has a surface color of $[1.0 \ 0.0 \ 0.7]$ and a surface normal of $[0.21 \ 0.84 \ 0.5]$. Given a light of color $[0.3 \ 1.0 \ 1.0]$ and direction $[0.58 \ 0.79 \ 0.2]$, what will be the diffuse component of p 's final color?
562. Given a point location of $[-5.0 \ -5.0 \ 3.0]$ and a light location of $[3.0 \ -1.0 \ 1.0]$, what is the light direction? (Remember to normalize.)
563. Point p has a surface color of $[1.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.59 \ 0.8 \ 0.11]$. Given a light of color $[1.0 \ 1.0 \ 1.3]$ and direction $[0.21 \ 0.59 \ 0.78]$, and a view direction $[0.37 \ 0.88 \ 0.3]$, 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 $[1.5 \ 0.5 \ 1.0]$ and a surface normal of $[0.52 \ 0.35 \ 0.78]$. Given a light of color $[0.0 \ 1.0 \ 0.8]$ and direction $[0.7 \ 0.68 \ 0.22]$, and a view direction $[0.37 \ 0.77 \ 0.52]$, what will be the specular component of p 's final color, with a Phong exponent of 2?
565. Given a point location of $[4.0 \ -4.0 \ -4.0]$ and a light location of $[-4.0 \ -3.0 \ 1.0]$, what is the light direction? (Remember to normalize.)
566. Point p has a surface color of $[0.5 \ 0.0 \ 1.0]$ and a surface normal of $[0.52 \ 0.37 \ 0.77]$. Given a light of color $[1.0 \ 2.0 \ 1.0]$ and direction $[0.48 \ 0.78 \ 0.4]$, a view direction $[0.58 \ 0.79 \ 0.2]$, and an ambient color $[1.0 \ 0.7 \ 0.7]$, what will be p 's final color, with a Phong exponent of 2?
567. Point p has a surface color of $[0.2 \ 1.0 \ 1.0]$ and a surface normal of $[0.35 \ 0.78 \ 0.52]$. Given a light of color $[1.0 \ 5.0 \ 5.0]$ and direction $[0.9 \ 0.37 \ 0.23]$, and a view direction $[0.55 \ 0.3 \ 0.78]$, 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 $[2.0 \ 0.0 \ 3.0]$, $[-4.0 \ -5.0 \ -1.0]$, and $[-5.0 \ 0.0 \ -3.0]$ (listed in the order of positive rotation)?
569. Point p has a surface color of $[0.3 \ 1.7 \ 1.0]$ and a surface normal of $[0.48 \ 0.77 \ 0.42]$. Given a light of color $[1.0 \ 0.0 \ 1.0]$ and direction $[0.9 \ 0.37 \ 0.23]$, and a view direction $[0.9 \ 0.23 \ 0.37]$, 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 $[1.0 \ 3.0 \ -1.0]$, $[-1.0 \ -1.0 \ -2.0]$, and $[-3.0 \ 1.0 \ -5.0]$ (listed in the order of positive rotation)?
571. Point p has a surface color of $[4.0 \ 4.0 \ 1.0]$ and a surface normal of $[0.01 \ 0.8 \ 0.6]$. Given a light of color $[1.0 \ 2.0 \ 1.0]$ and direction $[0.22 \ 0.7 \ 0.68]$, a view direction $[0.37 \ 0.77 \ 0.52]$, and an ambient color $[0.8 \ 1.0 \ 1.2]$, what will be p 's final color, with a Phong exponent of 2?

572. Point p has a surface color of $[1.0 \ 0.0 \ 1.0]$ and a surface normal of $[0.5 \ 0.84 \ 0.21]$. Given a light of color $[1.0 \ 1.0 \ 1.2]$ and direction $[0.22 \ 0.68 \ 0.7]$, a view direction $[0.21 \ 0.59 \ 0.78]$, and an ambient color $[1.0 \ 1.0 \ 0.0]$, what will be p 's final color, with a Phong exponent of 2?
573. Point p has a surface color of $[1.0 \ 1.5 \ 0.5]$ and a surface normal of $[0.78 \ 0.59 \ 0.21]$. Given a light of color $[0.5 \ 0.8 \ 1.0]$ and direction $[0.84 \ 0.21 \ 0.5]$, what will be the diffuse component of p 's final color?
574. Point p has a surface color of $[0.0 \ 1.0 \ 0.0]$ and a surface normal of $[0.3 \ 0.78 \ 0.55]$. Given a light of color $[1.5 \ 2.5 \ 1.0]$ and direction $[0.84 \ 0.5 \ 0.21]$, what will be the diffuse component of p 's final color?
575. Point p has a surface color of $[1.0 \ 1.0 \ 0.3]$ and a surface normal of $[0.78 \ 0.59 \ 0.21]$. Given a light of color $[5.0 \ 1.0 \ 1.0]$ and direction $[0.58 \ 0.54 \ 0.61]$, what will be the diffuse component of p 's final color?
576. Given a point location of $[3.0 \ 2.0 \ 3.0]$ and a light location of $[4.0 \ -1.0 \ -5.0]$, what is the light direction? (Remember to normalize.)
577. Point p has a surface color of $[2.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.6 \ 0.01 \ 0.8]$. Given a light of color $[0.2 \ 0.2 \ 1.0]$ and direction $[0.11 \ 0.59 \ 0.8]$, and a view direction $[0.8 \ 0.01 \ 0.6]$, 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 $[2.0 \ -4.0 \ -1.0]$, $[-5.0 \ -2.0 \ 2.0]$, and $[-1.0 \ -3.0 \ -2.0]$ (listed in the order of positive rotation)?
579. Point p has a surface color of $[3.0 \ 5.0 \ 1.0]$ and a surface normal of $[0.11 \ 0.8 \ 0.59]$. Given a light of color $[1.0 \ 1.0 \ 0.0]$ and direction $[0.3 \ 0.78 \ 0.55]$, a view direction $[0.54 \ 0.48 \ 0.69]$, and an ambient color $[0.8 \ 1.0 \ 0.2]$, what will be p 's final color, with a Phong exponent of 2?
580. Point p has a surface color of $[1.0 \ 0.5 \ 1.0]$ and a surface normal of $[0.58 \ 0.61 \ 0.54]$. Given a light of color $[5.0 \ 1.0 \ 4.0]$ and direction $[0.4 \ 0.78 \ 0.48]$, what will be the diffuse component of p 's final color?
581. Point p has a surface color of $[1.3 \ 1.0 \ 1.7]$ and a surface normal of $[0.68 \ 0.42 \ 0.6]$. Given a light of color $[0.5 \ 0.5 \ 1.0]$ and direction $[0.68 \ 0.6 \ 0.42]$, a view direction $[0.55 \ 0.3 \ 0.78]$, and an ambient color $[0.0 \ 2.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
582. Point p has a surface color of $[1.2 \ 0.5 \ 1.0]$ and a surface normal of $[0.9 \ 0.37 \ 0.23]$. Given a light of color $[1.2 \ 1.0 \ 1.0]$ and direction $[0.8 \ 0.11 \ 0.59]$, a view direction $[0.79 \ 0.2 \ 0.58]$, and an ambient color $[1.2 \ 1.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
583. Point p has a surface color of $[1.0 \ 0.0 \ 1.7]$ and a surface normal of $[0.37 \ 0.23 \ 0.9]$. Given a light of color $[3.0 \ 5.0 \ 1.0]$ and direction $[0.48 \ 0.4 \ 0.78]$, a view direction $[0.49 \ 0.58 \ 0.65]$, and an ambient color $[1.0 \ 0.5 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?

584. Point p has a surface color of $[3.0 \ 3.0 \ 1.0]$ and a surface normal of $[0.68 \ 0.22 \ 0.7]$. Given a light of color $[1.0 \ 2.5 \ 1.0]$ and direction $[0.54 \ 0.61 \ 0.58]$, a view direction $[0.78 \ 0.3 \ 0.55]$, and an ambient color $[1.0 \ 0.8 \ 0.0]$, what will be p's final color, with a Phong exponent of 2?
585. Given a point location of $[1.0 \ 4.0 \ -2.0]$ and a light location of $[4.0 \ -4.0 \ -2.0]$, what is the light direction? (Remember to normalize.)
586. Point p has a surface color of $[1.3 \ 1.3 \ 1.0]$ and a surface normal of $[0.68 \ 0.6 \ 0.42]$. Given a light of color $[0.0 \ 4.0 \ 1.0]$ and direction $[0.2 \ 0.58 \ 0.79]$, a view direction $[0.0 \ 0.8 \ 0.6]$, and an ambient color $[1.0 \ 4.0 \ 3.0]$, what will be p's final color, with a Phong exponent of 2?
587. Point p has a surface color of $[0.7 \ 1.7 \ 1.0]$ and a surface normal of $[0.3 \ 0.78 \ 0.55]$. Given a light of color $[0.3 \ 0.3 \ 1.0]$ and direction $[0.9 \ 0.37 \ 0.23]$, a view direction $[0.01 \ 0.6 \ 0.8]$, and an ambient color $[1.0 \ 0.5 \ 2.0]$, what will be p's final color, with a Phong exponent of 2?
588. Given a point location of $[-3.0 \ -3.0 \ 3.0]$ and a light location of $[-1.0 \ 1.0 \ -3.0]$, what is the light direction? (Remember to normalize.)
589. Given a point location of $[3.0 \ 4.0 \ 1.0]$ and a light location of $[-3.0 \ -3.0 \ 3.0]$, what is the light direction? (Remember to normalize.)
590. Point p has a surface color of $[0.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.9 \ 0.37 \ 0.23]$. Given a light of color $[0.0 \ 1.0 \ 1.0]$ and direction $[0.59 \ 0.11 \ 0.8]$, and a view direction $[0.3 \ 0.55 \ 0.78]$, 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 $[0.0 \ 4.0 \ -1.0]$, $[3.0 \ -2.0 \ -3.0]$, and $[4.0 \ 3.0 \ -4.0]$ (listed in the order of positive rotation)?
592. Point p has a surface color of $[1.0 \ 0.2 \ 1.0]$ and a surface normal of $[0.88 \ 0.37 \ 0.3]$. Given a light of color $[1.0 \ 2.0 \ 5.0]$ and direction $[0.11 \ 0.59 \ 0.8]$, a view direction $[0.37 \ 0.88 \ 0.3]$, and an ambient color $[1.0 \ 5.0 \ 0.0]$, what will be p's final color, with a Phong exponent of 2?
593. Point p has a surface color of $[0.5 \ 1.0 \ 0.0]$ and a surface normal of $[0.52 \ 0.35 \ 0.78]$. Given a light of color $[0.5 \ 1.0 \ 1.0]$ and direction $[0.88 \ 0.37 \ 0.3]$, a view direction $[0.42 \ 0.6 \ 0.68]$, and an ambient color $[1.0 \ 2.0 \ 2.0]$, what will be p's final color, with a Phong exponent of 2?
594. What is the normal to a triangle defined by vertices $[-1.0 \ 0.0 \ -2.0]$, $[-4.0 \ -2.0 \ 0.0]$, and $[4.0 \ 2.0 \ 2.0]$ (listed in the order of positive rotation)?
595. Point p has a surface color of $[1.0 \ 0.2 \ 0.5]$ and a surface normal of $[0.42 \ 0.77 \ 0.48]$. Given a light of color $[1.0 \ 0.5 \ 1.0]$ and direction $[0.78 \ 0.55 \ 0.3]$, what will be the diffuse component of p's final color?
596. Point p has a surface color of $[1.0 \ 0.0 \ 0.3]$ and a surface normal of $[0.5 \ 0.21 \ 0.84]$. Given a light of color $[1.0 \ 1.5 \ 1.0]$ and direction $[0.01 \ 0.8 \ 0.6]$, a view direction $[0.87 \ 0.44 \ 0.22]$, and an ambient color $[0.5 \ 0.2 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?

597. Point p has a surface color of $[0.2 \ 0.8 \ 1.0]$ and a surface normal of $[0.44 \ 0.84 \ 0.32]$. Given a light of color $[0.0 \ 1.0 \ 0.7]$ and direction $[0.4 \ 0.48 \ 0.78]$, what will be the diffuse component of p 's final color?
598. Given a point location of $[4.0 \ 2.0 \ 2.0]$ and a light location of $[-1.0 \ 0.0 \ 4.0]$, what is the light direction? (Remember to normalize.)
599. What is the normal to a triangle defined by vertices $[1.0 \ -2.0 \ -2.0]$, $[4.0 \ -5.0 \ 3.0]$, and $[-2.0 \ -1.0 \ 0.0]$ (listed in the order of positive rotation)?
600. Point p has a surface color of $[0.3 \ 1.0 \ 0.3]$ and a surface normal of $[0.58 \ 0.61 \ 0.54]$. Given a light of color $[1.5 \ 2.0 \ 1.0]$ and direction $[0.78 \ 0.59 \ 0.21]$, what will be the diffuse component of p 's final color?
601. Point p has a surface color of $[2.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.2 \ 0.55 \ 0.81]$. Given a light of color $[0.7 \ 1.0 \ 0.0]$ and direction $[0.77 \ 0.42 \ 0.48]$, what will be the diffuse component of p 's final color?
602. What is the normal to a triangle defined by vertices $[-2.0 \ -4.0 \ -2.0]$, $[-1.0 \ 2.0 \ 1.0]$, and $[-3.0 \ -5.0 \ -5.0]$ (listed in the order of positive rotation)?
603. Given a point location of $[-3.0 \ 4.0 \ -3.0]$ and a light location of $[-2.0 \ -1.0 \ -2.0]$, what is the light direction? (Remember to normalize.)
604. Given a point location of $[-2.0 \ -3.0 \ 3.0]$ and a light location of $[4.0 \ -5.0 \ 0.0]$, what is the light direction? (Remember to normalize.)
605. Given a point location of $[-2.0 \ -4.0 \ -3.0]$ and a light location of $[-3.0 \ 3.0 \ -5.0]$, what is the light direction? (Remember to normalize.)
606. Point p has a surface color of $[0.0 \ 1.0 \ 5.0]$ and a surface normal of $[0.9 \ 0.23 \ 0.37]$. Given a light of color $[1.0 \ 0.7 \ 1.0]$ and direction $[0.21 \ 0.59 \ 0.78]$, a view direction $[0.37 \ 0.88 \ 0.3]$, and an ambient color $[1.0 \ 1.0 \ 0.2]$, what will be p 's final color, with a Phong exponent of 2?
607. What is the normal to a triangle defined by vertices $[2.0 \ 2.0 \ -3.0]$, $[-2.0 \ -4.0 \ 4.0]$, and $[-4.0 \ 2.0 \ 4.0]$ (listed in the order of positive rotation)?
608. Given a point location of $[-5.0 \ 4.0 \ -3.0]$ and a light location of $[2.0 \ -2.0 \ -1.0]$, what is the light direction? (Remember to normalize.)
609. Given a point location of $[0.0 \ -3.0 \ 2.0]$ and a light location of $[-4.0 \ -1.0 \ -3.0]$, what is the light direction? (Remember to normalize.)
610. Point p has a surface color of $[1.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.48 \ 0.54 \ 0.69]$. Given a light of color $[2.5 \ 1.0 \ 2.5]$ and direction $[0.49 \ 0.65 \ 0.58]$, a view direction $[0.68 \ 0.7 \ 0.22]$, and an ambient color $[1.0 \ 1.5 \ 0.5]$, what will be p 's final color, with a Phong exponent of 2?
611. Point p has a surface color of $[2.0 \ 1.0 \ 0.0]$ and a surface normal of $[0.84 \ 0.32 \ 0.44]$. Given a light of color $[1.5 \ 0.5 \ 1.0]$ and direction $[0.87 \ 0.44 \ 0.22]$, a view direction $[0.21 \ 0.59 \ 0.78]$, and an ambient color $[1.0 \ 0.2 \ 0.5]$, what will be p 's final color, with a Phong exponent of 2?

612. What is the normal to a triangle defined by vertices $[4.0 \ 2.0 \ -4.0]$, $[-4.0 \ -5.0 \ -3.0]$, and $[-2.0 \ 4.0 \ 3.0]$ (listed in the order of positive rotation)?
613. Point p has a surface color of $[3.0 \ 1.0 \ 0.0]$ and a surface normal of $[0.11 \ 0.59 \ 0.8]$. Given a light of color $[2.0 \ 1.0 \ 2.0]$ and direction $[0.49 \ 0.58 \ 0.65]$, a view direction $[0.68 \ 0.22 \ 0.7]$, and an ambient color $[0.5 \ 1.0 \ 2.0]$, what will be p's final color, with a Phong exponent of 2?
614. Point p has a surface color of $[1.0 \ 0.2 \ 0.5]$ and a surface normal of $[0.49 \ 0.58 \ 0.65]$. Given a light of color $[4.0 \ 1.0 \ 1.0]$ and direction $[0.35 \ 0.52 \ 0.78]$, what will be the diffuse component of p's final color?
615. Point p has a surface color of $[1.0 \ 5.0 \ 4.0]$ and a surface normal of $[0.2 \ 0.55 \ 0.81]$. Given a light of color $[1.0 \ 4.0 \ 5.0]$ and direction $[0.55 \ 0.78 \ 0.3]$, and a view direction $[0.6 \ 0.68 \ 0.42]$, what will be the specular component of p's final color, with a Phong exponent of 2?
616. Given a point location of $[0.0 \ -4.0 \ 0.0]$ and a light location of $[1.0 \ -2.0 \ 1.0]$, what is the light direction? (Remember to normalize.)
617. Point p has a surface color of $[1.0 \ 0.7 \ 0.7]$ and a surface normal of $[0.21 \ 0.5 \ 0.84]$. Given a light of color $[1.0 \ 1.2 \ 1.0]$ and direction $[0.6 \ 0.8 \ 0.01]$, what will be the diffuse component of p's final color?
618. What is the normal to a triangle defined by vertices $[0.0 \ 1.0 \ -2.0]$, $[3.0 \ -5.0 \ -4.0]$, and $[-3.0 \ -1.0 \ 0.0]$ (listed in the order of positive rotation)?
619. What is the normal to a triangle defined by vertices $[-1.0 \ 1.0 \ 1.0]$, $[-4.0 \ 4.0 \ 3.0]$, and $[3.0 \ -2.0 \ 4.0]$ (listed in the order of positive rotation)?
620. Point p has a surface color of $[0.3 \ 1.0 \ 0.0]$ and a surface normal of $[0.48 \ 0.77 \ 0.42]$. Given a light of color $[1.0 \ 1.0 \ 1.7]$ and direction $[0.58 \ 0.2 \ 0.79]$, and a view direction $[0.3 \ 0.55 \ 0.78]$, 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 $[1.0 \ 1.5 \ 0.5]$ and a surface normal of $[0.52 \ 0.37 \ 0.77]$. Given a light of color $[1.0 \ 0.2 \ 1.2]$ and direction $[0.79 \ 0.58 \ 0.2]$, what will be the diffuse component of p's final color?
622. What is the normal to a triangle defined by vertices $[2.0 \ -4.0 \ -5.0]$, $[-5.0 \ -4.0 \ 0.0]$, and $[0.0 \ -1.0 \ -1.0]$ (listed in the order of positive rotation)?
623. Point p has a surface color of $[0.0 \ 1.0 \ 0.5]$ and a surface normal of $[0.4 \ 0.78 \ 0.48]$. Given a light of color $[1.0 \ 1.3 \ 1.3]$ and direction $[0.49 \ 0.65 \ 0.58]$, and a view direction $[0.32 \ 0.44 \ 0.84]$, what will be the specular component of p's final color, with a Phong exponent of 2?
624. Given a point location of $[3.0 \ 0.0 \ -3.0]$ and a light location of $[-2.0 \ -5.0 \ -1.0]$, what is the light direction? (Remember to normalize.)
625. Given a point location of $[-3.0 \ -2.0 \ 1.0]$ and a light location of $[1.0 \ 3.0 \ -4.0]$, what is the light direction? (Remember to normalize.)

626. What is the normal to a triangle defined by vertices $[0.0 \ -2.0 \ -1.0]$, $[0.0 \ -4.0 \ 1.0]$, and $[3.0 \ -1.0 \ 4.0]$ (listed in the order of positive rotation)?
627. Given a point location of $[-5.0 \ 3.0 \ 1.0]$ and a light location of $[4.0 \ -3.0 \ -4.0]$, what is the light direction? (Remember to normalize.)
628. Point p has a surface color of $[0.5 \ 0.5 \ 1.0]$ and a surface normal of $[0.84 \ 0.21 \ 0.5]$. Given a light of color $[1.0 \ 1.2 \ 1.0]$ and direction $[0.61 \ 0.54 \ 0.58]$, what will be the diffuse component of p's final color?
629. Point p has a surface color of $[1.0 \ 5.0 \ 5.0]$ and a surface normal of $[0.68 \ 0.7 \ 0.22]$. Given a light of color $[4.0 \ 3.0 \ 1.0]$ and direction $[0.59 \ 0.8 \ 0.11]$, what will be the diffuse component of p's final color?
630. Point p has a surface color of $[2.0 \ 1.0 \ 2.5]$ and a surface normal of $[0.58 \ 0.79 \ 0.2]$. Given a light of color $[1.0 \ 0.7 \ 0.0]$ and direction $[0.48 \ 0.77 \ 0.42]$, a view direction $[0.61 \ 0.54 \ 0.58]$, and an ambient color $[3.0 \ 1.0 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
631. Given a point location of $[3.0 \ -3.0 \ -3.0]$ and a light location of $[1.0 \ -1.0 \ -4.0]$, what is the light direction? (Remember to normalize.)
632. Point p has a surface color of $[1.0 \ 1.2 \ 0.0]$ and a surface normal of $[0.37 \ 0.3 \ 0.88]$. Given a light of color $[5.0 \ 1.0 \ 3.0]$ and direction $[0.2 \ 0.79 \ 0.58]$, what will be the diffuse component of p's final color?
633. Point p has a surface color of $[1.0 \ 5.0 \ 1.0]$ and a surface normal of $[0.32 \ 0.44 \ 0.84]$. Given a light of color $[1.0 \ 1.7 \ 1.7]$ and direction $[0.79 \ 0.58 \ 0.2]$, and a view direction $[0.6 \ 0.0 \ 0.8]$, 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 $[1.0 \ 1.0 \ 0.7]$ and a surface normal of $[0.8 \ 0.11 \ 0.59]$. Given a light of color $[1.7 \ 0.0 \ 1.0]$ and direction $[0.22 \ 0.87 \ 0.44]$, and a view direction $[0.9 \ 0.23 \ 0.37]$, 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 $[3.0 \ -1.0 \ -3.0]$, $[2.0 \ -1.0 \ -2.0]$, and $[-2.0 \ 1.0 \ 0.0]$ (listed in the order of positive rotation)?
636. What is the normal to a triangle defined by vertices $[0.0 \ 3.0 \ 1.0]$, $[2.0 \ 3.0 \ -4.0]$, and $[2.0 \ -2.0 \ -1.0]$ (listed in the order of positive rotation)?
637. Point p has a surface color of $[1.0 \ 0.7 \ 1.0]$ and a surface normal of $[0.3 \ 0.78 \ 0.55]$. Given a light of color $[1.0 \ 1.0 \ 0.0]$ and direction $[0.52 \ 0.78 \ 0.35]$, a view direction $[0.77 \ 0.42 \ 0.48]$, and an ambient color $[5.0 \ 1.0 \ 4.0]$, what will be p's final color, with a Phong exponent of 2?
638. Given a point location of $[1.0 \ -2.0 \ -5.0]$ and a light location of $[4.0 \ 2.0 \ 4.0]$, what is the light direction? (Remember to normalize.)
639. Point p has a surface color of $[1.7 \ 0.0 \ 1.0]$ and a surface normal of $[0.11 \ 0.59 \ 0.8]$. Given a light of color $[0.3 \ 0.0 \ 1.0]$ and direction $[0.78 \ 0.48 \ 0.4]$, a view direction $[0.78 \ 0.35 \ 0.52]$,

- and an ambient color $[1.0 \ 0.7 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
640. Point p has a surface color of $[0.2 \ 1.0 \ 0.0]$ and a surface normal of $[0.78 \ 0.55 \ 0.3]$. Given a light of color $[0.0 \ 1.0 \ 1.0]$ and direction $[0.22 \ 0.87 \ 0.44]$, and a view direction $[0.59 \ 0.21 \ 0.78]$, 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 $[0.0 \ 0.0 \ 3.0]$, $[-4.0 \ -4.0 \ -4.0]$, and $[-2.0 \ 4.0 \ 2.0]$ (listed in the order of positive rotation)?
642. Point p has a surface color of $[1.0 \ 1.0 \ 0.0]$ and a surface normal of $[0.48 \ 0.69 \ 0.54]$. Given a light of color $[1.2 \ 1.0 \ 0.8]$ and direction $[0.8 \ 0.11 \ 0.59]$, what will be the diffuse component of p's final color?
643. Point p has a surface color of $[1.0 \ 1.0 \ 0.8]$ and a surface normal of $[0.2 \ 0.81 \ 0.55]$. Given a light of color $[3.0 \ 0.0 \ 1.0]$ and direction $[0.84 \ 0.21 \ 0.5]$, a view direction $[0.58 \ 0.2 \ 0.79]$, and an ambient color $[0.0 \ 0.5 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
644. Point p has a surface color of $[1.7 \ 0.3 \ 1.0]$ and a surface normal of $[0.88 \ 0.37 \ 0.3]$. Given a light of color $[1.7 \ 1.0 \ 0.3]$ and direction $[0.77 \ 0.52 \ 0.37]$, what will be the diffuse component of p's final color?
645. Point p has a surface color of $[1.0 \ 0.8 \ 0.5]$ and a surface normal of $[0.58 \ 0.65 \ 0.49]$. Given a light of color $[1.0 \ 0.7 \ 0.0]$ and direction $[0.37 \ 0.88 \ 0.3]$, what will be the diffuse component of p's final color?
646. What is the normal to a triangle defined by vertices $[-3.0 \ -1.0 \ 3.0]$, $[-4.0 \ 3.0 \ -4.0]$, and $[4.0 \ 2.0 \ 0.0]$ (listed in the order of positive rotation)?
647. Point p has a surface color of $[1.0 \ 0.2 \ 0.0]$ and a surface normal of $[0.01 \ 0.8 \ 0.6]$. Given a light of color $[1.0 \ 2.0 \ 1.5]$ and direction $[0.49 \ 0.65 \ 0.58]$, a view direction $[0.59 \ 0.78 \ 0.21]$, and an ambient color $[1.0 \ 4.0 \ 3.0]$, what will be p's final color, with a Phong exponent of 2?
648. Point p has a surface color of $[1.0 \ 1.0 \ 0.0]$ and a surface normal of $[0.78 \ 0.59 \ 0.21]$. Given a light of color $[0.3 \ 0.7 \ 1.0]$ and direction $[0.78 \ 0.52 \ 0.35]$, and a view direction $[0.42 \ 0.48 \ 0.77]$, what will be the specular component of p's final color, with a Phong exponent of 2?
649. Given a point location of $[-1.0 \ -3.0 \ 0.0]$ and a light location of $[-5.0 \ 1.0 \ -3.0]$, what is the light direction? (Remember to normalize.)
650. Point p has a surface color of $[0.0 \ 1.0 \ 0.0]$ and a surface normal of $[0.79 \ 0.58 \ 0.2]$. Given a light of color $[0.0 \ 1.0 \ 0.3]$ and direction $[0.48 \ 0.78 \ 0.4]$, and a view direction $[0.3 \ 0.55 \ 0.78]$, 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 $[1.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.78 \ 0.52 \ 0.35]$. Given a light of color $[2.5 \ 1.0 \ 2.5]$ and direction $[0.44 \ 0.87 \ 0.22]$, a view direction $[0.3 \ 0.37 \ 0.88]$, and an ambient color $[1.0 \ 0.5 \ 0.2]$, what will be p's final color, with a Phong exponent of 2?

652. Point p has a surface color of $[1.0 \ 1.0 \ 4.0]$ and a surface normal of $[0.65 \ 0.49 \ 0.58]$. Given a light of color $[1.0 \ 2.5 \ 2.0]$ and direction $[0.81 \ 0.2 \ 0.55]$, a view direction $[0.68 \ 0.6 \ 0.42]$, and an ambient color $[1.5 \ 1.0 \ 2.5]$, what will be p 's final color, with a Phong exponent of 2?
653. Point p has a surface color of $[1.0 \ 0.3 \ 1.0]$ and a surface normal of $[0.0 \ 0.8 \ 0.6]$. Given a light of color $[0.3 \ 0.0 \ 1.0]$ and direction $[0.55 \ 0.3 \ 0.78]$, what will be the diffuse component of p 's final color?
654. Point p has a surface color of $[1.0 \ 1.0 \ 0.5]$ and a surface normal of $[0.77 \ 0.42 \ 0.48]$. Given a light of color $[1.7 \ 1.0 \ 0.7]$ and direction $[0.78 \ 0.3 \ 0.55]$, and a view direction $[0.78 \ 0.21 \ 0.59]$, 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 $[0.5 \ 1.0 \ 1.5]$ and a surface normal of $[0.54 \ 0.61 \ 0.58]$. Given a light of color $[0.7 \ 1.0 \ 0.3]$ and direction $[0.78 \ 0.52 \ 0.35]$, a view direction $[0.78 \ 0.3 \ 0.55]$, and an ambient color $[0.7 \ 0.3 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
656. Point p has a surface color of $[2.0 \ 1.0 \ 0.0]$ and a surface normal of $[0.69 \ 0.54 \ 0.48]$. Given a light of color $[1.0 \ 1.0 \ 0.5]$ and direction $[0.4 \ 0.48 \ 0.78]$, a view direction $[0.69 \ 0.54 \ 0.48]$, and an ambient color $[1.0 \ 1.0 \ 1.5]$, what will be p 's final color, with a Phong exponent of 2?
657. Point p has a surface color of $[1.0 \ 0.5 \ 1.0]$ and a surface normal of $[0.23 \ 0.37 \ 0.9]$. Given a light of color $[4.0 \ 0.0 \ 1.0]$ and direction $[0.79 \ 0.58 \ 0.2]$, what will be the diffuse component of p 's final color?
658. Given a point location of $[0.0 \ -3.0 \ -2.0]$ and a light location of $[-5.0 \ 0.0 \ -3.0]$, what is the light direction? (Remember to normalize.)
659. Point p has a surface color of $[1.0 \ 4.0 \ 4.0]$ and a surface normal of $[0.37 \ 0.3 \ 0.88]$. Given a light of color $[0.7 \ 1.0 \ 1.7]$ and direction $[0.6 \ 0.0 \ 0.8]$, and a view direction $[0.78 \ 0.3 \ 0.55]$, 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 $[-5.0 \ -2.0 \ 4.0]$, $[-2.0 \ 4.0 \ 1.0]$, and $[0.0 \ -5.0 \ -3.0]$ (listed in the order of positive rotation)?
661. What is the normal to a triangle defined by vertices $[-5.0 \ -3.0 \ 2.0]$, $[-4.0 \ 3.0 \ -1.0]$, and $[-3.0 \ 0.0 \ -5.0]$ (listed in the order of positive rotation)?
662. Point p has a surface color of $[0.5 \ 1.2 \ 1.0]$ and a surface normal of $[0.69 \ 0.54 \ 0.48]$. Given a light of color $[1.0 \ 0.5 \ 0.5]$ and direction $[0.11 \ 0.59 \ 0.8]$, what will be the diffuse component of p 's final color?
663. What is the normal to a triangle defined by vertices $[1.0 \ -2.0 \ -1.0]$, $[1.0 \ -1.0 \ 4.0]$, and $[-1.0 \ -3.0 \ 2.0]$ (listed in the order of positive rotation)?
664. Given a point location of $[4.0 \ -3.0 \ 4.0]$ and a light location of $[2.0 \ 0.0 \ -1.0]$, what is the light direction? (Remember to normalize.)

665. Given a point location of $[-4.0 \ 3.0 \ 2.0]$ and a light location of $[-3.0 \ 1.0 \ -3.0]$, what is the light direction? (Remember to normalize.)
666. Given a point location of $[-5.0 \ -1.0 \ -4.0]$ and a light location of $[-2.0 \ 4.0 \ -5.0]$, what is the light direction? (Remember to normalize.)
667. What is the normal to a triangle defined by vertices $[-5.0 \ 1.0 \ -3.0]$, $[-5.0 \ -4.0 \ -3.0]$, and $[-2.0 \ 3.0 \ 0.0]$ (listed in the order of positive rotation)?
668. Point p has a surface color of $[1.0 \ 5.0 \ 2.0]$ and a surface normal of $[0.78 \ 0.55 \ 0.3]$. Given a light of color $[1.0 \ 3.0 \ 1.0]$ and direction $[0.37 \ 0.9 \ 0.23]$, what will be the diffuse component of p's final color?
669. Point p has a surface color of $[1.0 \ 1.7 \ 0.7]$ and a surface normal of $[0.69 \ 0.54 \ 0.48]$. Given a light of color $[2.0 \ 1.0 \ 1.0]$ and direction $[0.8 \ 0.59 \ 0.11]$, what will be the diffuse component of p's final color?
670. Point p has a surface color of $[1.0 \ 0.5 \ 0.5]$ and a surface normal of $[0.42 \ 0.6 \ 0.68]$. Given a light of color $[0.3 \ 1.0 \ 0.7]$ and direction $[0.8 \ 0.6 \ 0.01]$, what will be the diffuse component of p's final color?
671. Point p has a surface color of $[1.0 \ 1.0 \ 0.7]$ and a surface normal of $[0.8 \ 0.01 \ 0.6]$. Given a light of color $[0.0 \ 1.0 \ 1.3]$ and direction $[0.52 \ 0.77 \ 0.37]$, a view direction $[0.68 \ 0.22 \ 0.7]$, and an ambient color $[1.0 \ 1.0 \ 0.3]$, what will be p's final color, with a Phong exponent of 2?
672. Point p has a surface color of $[0.0 \ 3.0 \ 1.0]$ and a surface normal of $[0.8 \ 0.11 \ 0.59]$. Given a light of color $[1.0 \ 1.0 \ 2.0]$ and direction $[0.3 \ 0.78 \ 0.55]$, a view direction $[0.2 \ 0.58 \ 0.79]$, and an ambient color $[1.0 \ 4.0 \ 5.0]$, what will be p's final color, with a Phong exponent of 2?
673. What is the normal to a triangle defined by vertices $[-3.0 \ 3.0 \ -2.0]$, $[-4.0 \ 1.0 \ -2.0]$, and $[-4.0 \ -4.0 \ 2.0]$ (listed in the order of positive rotation)?
674. Given a point location of $[-5.0 \ 3.0 \ -4.0]$ and a light location of $[1.0 \ -1.0 \ -5.0]$, what is the light direction? (Remember to normalize.)
675. Point p has a surface color of $[1.0 \ 0.8 \ 0.5]$ and a surface normal of $[0.11 \ 0.59 \ 0.8]$. Given a light of color $[1.0 \ 1.0 \ 0.5]$ and direction $[0.48 \ 0.42 \ 0.77]$, what will be the diffuse component of p's final color?
676. Point p has a surface color of $[0.3 \ 1.0 \ 0.7]$ and a surface normal of $[0.88 \ 0.3 \ 0.37]$. Given a light of color $[1.5 \ 0.5 \ 1.0]$ and direction $[0.84 \ 0.5 \ 0.21]$, what will be the diffuse component of p's final color?
677. What is the normal to a triangle defined by vertices $[4.0 \ -1.0 \ 3.0]$, $[-3.0 \ -3.0 \ -1.0]$, and $[2.0 \ -3.0 \ 0.0]$ (listed in the order of positive rotation)?
678. Point p has a surface color of $[1.0 \ 0.5 \ 0.8]$ and a surface normal of $[0.7 \ 0.68 \ 0.22]$. Given a light of color $[0.5 \ 0.0 \ 1.0]$ and direction $[0.58 \ 0.49 \ 0.65]$, a view direction $[0.54 \ 0.58 \ 0.61]$, and an ambient color $[0.3 \ 1.0 \ 1.7]$, what will be p's final color, with a Phong exponent of 2?

679. Given a point location of $[2.0 \ -4.0 \ -3.0]$ and a light location of $[-5.0 \ 2.0 \ 1.0]$, what is the light direction? (Remember to normalize.)
680. Point p has a surface color of $[0.0 \ 1.0 \ 0.5]$ and a surface normal of $[0.78 \ 0.55 \ 0.3]$. Given a light of color $[1.7 \ 1.7 \ 1.0]$ and direction $[0.77 \ 0.37 \ 0.52]$, a view direction $[0.55 \ 0.3 \ 0.78]$, and an ambient color $[2.5 \ 1.0 \ 1.5]$, what will be p's final color, with a Phong exponent of 2?
681. What is the normal to a triangle defined by vertices $[1.0 \ -4.0 \ 3.0]$, $[0.0 \ 4.0 \ -2.0]$, and $[-2.0 \ -2.0 \ -2.0]$ (listed in the order of positive rotation)?
682. Given a point location of $[-4.0 \ -3.0 \ -4.0]$ and a light location of $[-2.0 \ -5.0 \ 0.0]$, what is the light direction? (Remember to normalize.)
683. Point p has a surface color of $[0.5 \ 2.0 \ 1.0]$ and a surface normal of $[0.8 \ 0.0 \ 0.6]$. Given a light of color $[1.0 \ 1.0 \ 0.2]$ and direction $[0.4 \ 0.78 \ 0.48]$, what will be the diffuse component of p's final color?
684. What is the normal to a triangle defined by vertices $[-5.0 \ -2.0 \ -5.0]$, $[1.0 \ -2.0 \ 3.0]$, and $[-5.0 \ -2.0 \ 2.0]$ (listed in the order of positive rotation)?
685. Given a point location of $[1.0 \ -3.0 \ 2.0]$ and a light location of $[1.0 \ 3.0 \ 0.0]$, what is the light direction? (Remember to normalize.)
686. Point p has a surface color of $[1.0 \ 0.2 \ 0.2]$ and a surface normal of $[0.42 \ 0.6 \ 0.68]$. Given a light of color $[0.7 \ 1.0 \ 0.0]$ and direction $[0.6 \ 0.8 \ 0.01]$, a view direction $[0.2 \ 0.55 \ 0.81]$, and an ambient color $[0.5 \ 0.5 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
687. Point p has a surface color of $[0.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.2 \ 0.79 \ 0.58]$. Given a light of color $[1.0 \ 0.2 \ 1.0]$ and direction $[0.4 \ 0.78 \ 0.48]$, what will be the diffuse component of p's final color?
688. Point p has a surface color of $[5.0 \ 0.0 \ 1.0]$ and a surface normal of $[0.5 \ 0.21 \ 0.84]$. Given a light of color $[1.0 \ 1.0 \ 0.2]$ and direction $[0.78 \ 0.55 \ 0.3]$, a view direction $[0.78 \ 0.55 \ 0.3]$, and an ambient color $[1.0 \ 0.0 \ 5.0]$, what will be p's final color, with a Phong exponent of 2?
689. What is the normal to a triangle defined by vertices $[-4.0 \ 4.0 \ 4.0]$, $[0.0 \ 2.0 \ 3.0]$, and $[-3.0 \ -1.0 \ -1.0]$ (listed in the order of positive rotation)?
690. Point p has a surface color of $[1.0 \ 1.0 \ 0.5]$ and a surface normal of $[0.8 \ 0.0 \ 0.6]$. Given a light of color $[1.0 \ 3.0 \ 1.0]$ and direction $[0.3 \ 0.78 \ 0.55]$, what will be the diffuse component of p's final color?
691. What is the normal to a triangle defined by vertices $[3.0 \ 2.0 \ 3.0]$, $[-4.0 \ 0.0 \ 3.0]$, and $[-4.0 \ 4.0 \ 1.0]$ (listed in the order of positive rotation)?
692. Point p has a surface color of $[0.5 \ 1.0 \ 0.5]$ and a surface normal of $[0.68 \ 0.42 \ 0.6]$. Given a light of color $[1.0 \ 1.0 \ 2.5]$ and direction $[0.3 \ 0.55 \ 0.78]$, a view direction $[0.3 \ 0.78 \ 0.55]$, and an ambient color $[4.0 \ 0.0 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?

693. Given a point location of $[-5.0 \ -5.0 \ -2.0]$ and a light location of $[-5.0 \ -3.0 \ -3.0]$, what is the light direction? (Remember to normalize.)
694. Point p has a surface color of $[1.0 \ 1.3 \ 1.0]$ and a surface normal of $[0.52 \ 0.78 \ 0.35]$. Given a light of color $[5.0 \ 1.0 \ 1.0]$ and direction $[0.69 \ 0.54 \ 0.48]$, what will be the diffuse component of p's final color?
695. Point p has a surface color of $[0.0 \ 1.0 \ 4.0]$ and a surface normal of $[0.54 \ 0.61 \ 0.58]$. Given a light of color $[0.0 \ 1.0 \ 1.3]$ and direction $[0.2 \ 0.55 \ 0.81]$, a view direction $[0.42 \ 0.77 \ 0.48]$, and an ambient color $[0.5 \ 0.2 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
696. Point p has a surface color of $[1.0 \ 1.0 \ 0.5]$ and a surface normal of $[0.68 \ 0.42 \ 0.6]$. Given a light of color $[1.7 \ 1.0 \ 1.7]$ and direction $[0.9 \ 0.37 \ 0.23]$, a view direction $[0.69 \ 0.54 \ 0.48]$, and an ambient color $[1.0 \ 1.0 \ 0.2]$, what will be p's final color, with a Phong exponent of 2?
697. Given a point location of $[-1.0 \ 1.0 \ 4.0]$ and a light location of $[4.0 \ 0.0 \ -4.0]$, what is the light direction? (Remember to normalize.)
698. Point p has a surface color of $[0.3 \ 0.0 \ 1.0]$ and a surface normal of $[0.22 \ 0.68 \ 0.7]$. Given a light of color $[1.7 \ 1.0 \ 0.0]$ and direction $[0.58 \ 0.61 \ 0.54]$, and a view direction $[0.11 \ 0.59 \ 0.8]$, 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 $[1.2 \ 1.0 \ 0.2]$ and a surface normal of $[0.44 \ 0.87 \ 0.22]$. Given a light of color $[1.0 \ 1.0 \ 1.0]$ and direction $[0.78 \ 0.21 \ 0.59]$, a view direction $[0.32 \ 0.84 \ 0.44]$, and an ambient color $[1.5 \ 2.5 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
700. Point p has a surface color of $[3.0 \ 4.0 \ 1.0]$ and a surface normal of $[0.42 \ 0.77 \ 0.48]$. Given a light of color $[1.0 \ 1.0 \ 1.3]$ and direction $[0.3 \ 0.55 \ 0.78]$, and a view direction $[0.78 \ 0.48 \ 0.4]$, 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 $[-2.0 \ 3.0 \ -5.0]$, $[-1.0 \ 0.0 \ -1.0]$, and $[-4.0 \ 0.0 \ 1.0]$ (listed in the order of positive rotation)?
702. What is the normal to a triangle defined by vertices $[1.0 \ -4.0 \ -2.0]$, $[-3.0 \ 0.0 \ -1.0]$, and $[1.0 \ 2.0 \ -3.0]$ (listed in the order of positive rotation)?
703. Given a point location of $[-5.0 \ -3.0 \ -3.0]$ and a light location of $[-5.0 \ -3.0 \ -4.0]$, what is the light direction? (Remember to normalize.)
704. Point p has a surface color of $[0.5 \ 1.0 \ 1.0]$ and a surface normal of $[0.21 \ 0.5 \ 0.84]$. Given a light of color $[1.0 \ 2.0 \ 1.0]$ and direction $[0.52 \ 0.77 \ 0.37]$, a view direction $[0.84 \ 0.5 \ 0.21]$, and an ambient color $[0.0 \ 1.0 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
705. Point p has a surface color of $[1.0 \ 0.5 \ 1.0]$ and a surface normal of $[0.37 \ 0.88 \ 0.3]$. Given a light of color $[1.0 \ 5.0 \ 3.0]$ and direction $[0.6 \ 0.68 \ 0.42]$, what will be the diffuse component of p's final color?

706. Given a point location of $[-4.0 \ -5.0 \ 2.0]$ and a light location of $[1.0 \ 0.0 \ 3.0]$, what is the light direction? (Remember to normalize.)
707. What is the normal to a triangle defined by vertices $[-2.0 \ 3.0 \ 1.0]$, $[4.0 \ -2.0 \ -4.0]$, and $[-5.0 \ -2.0 \ -3.0]$ (listed in the order of positive rotation)?
708. Point p has a surface color of $[2.5 \ 1.0 \ 2.0]$ and a surface normal of $[0.37 \ 0.3 \ 0.88]$. Given a light of color $[1.0 \ 1.0 \ 0.0]$ and direction $[0.4 \ 0.78 \ 0.48]$, and a view direction $[0.78 \ 0.55 \ 0.3]$, 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 $[3.0 \ 1.0 \ 3.0]$ and a surface normal of $[0.84 \ 0.5 \ 0.21]$. Given a light of color $[4.0 \ 2.0 \ 1.0]$ and direction $[0.7 \ 0.68 \ 0.22]$, and a view direction $[0.55 \ 0.78 \ 0.3]$, 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 $[1.0 \ 0.0 \ 0.7]$ and a surface normal of $[0.52 \ 0.77 \ 0.37]$. Given a light of color $[1.0 \ 1.0 \ 0.0]$ and direction $[0.61 \ 0.58 \ 0.54]$, and a view direction $[0.2 \ 0.58 \ 0.79]$, what will be the specular component of p's final color, with a Phong exponent of 2?
711. Given a point location of $[-5.0 \ -5.0 \ -5.0]$ and a light location of $[-4.0 \ -1.0 \ 2.0]$, what is the light direction? (Remember to normalize.)
712. Given a point location of $[4.0 \ 3.0 \ 2.0]$ and a light location of $[4.0 \ 2.0 \ -4.0]$, what is the light direction? (Remember to normalize.)
713. Point p has a surface color of $[0.0 \ 4.0 \ 1.0]$ and a surface normal of $[0.32 \ 0.84 \ 0.44]$. Given a light of color $[0.7 \ 0.3 \ 1.0]$ and direction $[0.58 \ 0.54 \ 0.61]$, what will be the diffuse component of p's final color?
714. Point p has a surface color of $[1.0 \ 1.0 \ 0.8]$ and a surface normal of $[0.55 \ 0.3 \ 0.78]$. Given a light of color $[1.0 \ 0.7 \ 0.3]$ and direction $[0.6 \ 0.0 \ 0.8]$, what will be the diffuse component of p's final color?
715. Given a point location of $[-3.0 \ 0.0 \ -4.0]$ and a light location of $[4.0 \ 4.0 \ 2.0]$, what is the light direction? (Remember to normalize.)
716. Point p has a surface color of $[1.0 \ 0.2 \ 0.8]$ and a surface normal of $[0.59 \ 0.8 \ 0.11]$. Given a light of color $[2.0 \ 5.0 \ 1.0]$ and direction $[0.3 \ 0.55 \ 0.78]$, what will be the diffuse component of p's final color?
717. Point p has a surface color of $[1.0 \ 1.2 \ 1.0]$ and a surface normal of $[0.3 \ 0.37 \ 0.88]$. Given a light of color $[0.8 \ 1.2 \ 1.0]$ and direction $[0.8 \ 0.0 \ 0.6]$, what will be the diffuse component of p's final color?
718. Point p has a surface color of $[1.0 \ 0.0 \ 0.2]$ and a surface normal of $[0.42 \ 0.48 \ 0.77]$. Given a light of color $[1.0 \ 5.0 \ 0.0]$ and direction $[0.81 \ 0.55 \ 0.2]$, and a view direction $[0.35 \ 0.52 \ 0.78]$, what will be the specular component of p's final color, with a Phong exponent of 2?
719. Given a point location of $[2.0 \ 0.0 \ -3.0]$ and a light location of $[2.0 \ -2.0 \ 4.0]$, what is the light direction? (Remember to normalize.)

720. What is the normal to a triangle defined by vertices $[2.0 \ -2.0 \ 0.0]$, $[-2.0 \ 2.0 \ -5.0]$, and $[4.0 \ 0.0 \ 4.0]$ (listed in the order of positive rotation)?
721. Point p has a surface color of $[0.5 \ 1.0 \ 0.0]$ and a surface normal of $[0.52 \ 0.77 \ 0.37]$. Given a light of color $[1.0 \ 0.7 \ 0.7]$ and direction $[0.55 \ 0.81 \ 0.2]$, what will be the diffuse component of p 's final color?
722. Point p has a surface color of $[5.0 \ 1.0 \ 5.0]$ and a surface normal of $[0.32 \ 0.44 \ 0.84]$. Given a light of color $[4.0 \ 1.0 \ 4.0]$ and direction $[0.78 \ 0.4 \ 0.48]$, what will be the diffuse component of p 's final color?
723. Given a point location of $[-2.0 \ 3.0 \ 3.0]$ and a light location of $[3.0 \ -4.0 \ 1.0]$, what is the light direction? (Remember to normalize.)
724. Point p has a surface color of $[1.2 \ 0.2 \ 1.0]$ and a surface normal of $[0.11 \ 0.59 \ 0.8]$. Given a light of color $[5.0 \ 0.0 \ 1.0]$ and direction $[0.58 \ 0.54 \ 0.61]$, a view direction $[0.22 \ 0.44 \ 0.87]$, and an ambient color $[1.0 \ 2.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
725. Point p has a surface color of $[1.0 \ 1.0 \ 1.2]$ and a surface normal of $[0.61 \ 0.54 \ 0.58]$. Given a light of color $[0.0 \ 3.0 \ 1.0]$ and direction $[0.21 \ 0.78 \ 0.59]$, a view direction $[0.8 \ 0.59 \ 0.11]$, and an ambient color $[2.0 \ 2.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
726. Point p has a surface color of $[1.0 \ 0.2 \ 0.5]$ and a surface normal of $[0.58 \ 0.54 \ 0.61]$. Given a light of color $[0.0 \ 3.0 \ 1.0]$ and direction $[0.68 \ 0.42 \ 0.6]$, what will be the diffuse component of p 's final color?
727. What is the normal to a triangle defined by vertices $[-4.0 \ 0.0 \ -5.0]$, $[-5.0 \ -1.0 \ 4.0]$, and $[-4.0 \ 0.0 \ 4.0]$ (listed in the order of positive rotation)?
728. Given a point location of $[1.0 \ 4.0 \ -3.0]$ and a light location of $[-3.0 \ 0.0 \ -5.0]$, what is the light direction? (Remember to normalize.)
729. Point p has a surface color of $[1.0 \ 0.2 \ 1.2]$ and a surface normal of $[0.22 \ 0.87 \ 0.44]$. Given a light of color $[1.3 \ 1.3 \ 1.0]$ and direction $[0.58 \ 0.79 \ 0.2]$, a view direction $[0.65 \ 0.58 \ 0.49]$, and an ambient color $[0.5 \ 1.0 \ 0.5]$, what will be p 's final color, with a Phong exponent of 2?
730. Point p has a surface color of $[0.7 \ 1.0 \ 0.7]$ and a surface normal of $[0.23 \ 0.9 \ 0.37]$. Given a light of color $[1.0 \ 2.0 \ 1.0]$ and direction $[0.8 \ 0.11 \ 0.59]$, what will be the diffuse component of p 's final color?
731. Given a point location of $[1.0 \ -2.0 \ -3.0]$ and a light location of $[-3.0 \ 4.0 \ 2.0]$, what is the light direction? (Remember to normalize.)
732. Given a point location of $[3.0 \ 2.0 \ 1.0]$ and a light location of $[4.0 \ -5.0 \ -4.0]$, what is the light direction? (Remember to normalize.)
733. Given a point location of $[4.0 \ -4.0 \ -2.0]$ and a light location of $[-5.0 \ 0.0 \ 3.0]$, what is the light direction? (Remember to normalize.)

734. What is the normal to a triangle defined by vertices $[-1.0 \ 3.0 \ 1.0]$, $[0.0 \ 3.0 \ 0.0]$, and $[3.0 \ -4.0 \ -1.0]$ (listed in the order of positive rotation)?
735. Point p has a surface color of $[0.7 \ 0.7 \ 1.0]$ and a surface normal of $[0.88 \ 0.3 \ 0.37]$. Given a light of color $[2.0 \ 1.0 \ 1.5]$ and direction $[0.35 \ 0.78 \ 0.52]$, what will be the diffuse component of p's final color?
736. What is the normal to a triangle defined by vertices $[2.0 \ 0.0 \ -5.0]$, $[-1.0 \ -2.0 \ 0.0]$, and $[2.0 \ -4.0 \ -1.0]$ (listed in the order of positive rotation)?
737. Point p has a surface color of $[0.5 \ 1.0 \ 1.0]$ and a surface normal of $[0.58 \ 0.61 \ 0.54]$. Given a light of color $[1.0 \ 1.5 \ 0.5]$ and direction $[0.55 \ 0.2 \ 0.81]$, what will be the diffuse component of p's final color?
738. Point p has a surface color of $[0.0 \ 1.0 \ 0.3]$ and a surface normal of $[0.48 \ 0.78 \ 0.4]$. Given a light of color $[0.5 \ 1.5 \ 1.0]$ and direction $[0.58 \ 0.61 \ 0.54]$, a view direction $[0.9 \ 0.23 \ 0.37]$, and an ambient color $[1.2 \ 1.2 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
739. What is the normal to a triangle defined by vertices $[-4.0 \ 3.0 \ 4.0]$, $[-4.0 \ -3.0 \ -4.0]$, and $[4.0 \ 4.0 \ 0.0]$ (listed in the order of positive rotation)?
740. Point p has a surface color of $[0.0 \ 1.0 \ 5.0]$ and a surface normal of $[0.48 \ 0.4 \ 0.78]$. Given a light of color $[2.5 \ 0.5 \ 1.0]$ and direction $[0.87 \ 0.44 \ 0.22]$, a view direction $[0.44 \ 0.22 \ 0.87]$, and an ambient color $[1.0 \ 1.0 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
741. What is the normal to a triangle defined by vertices $[0.0 \ 1.0 \ 0.0]$, $[-4.0 \ -3.0 \ 3.0]$, and $[3.0 \ 0.0 \ -1.0]$ (listed in the order of positive rotation)?
742. Given a point location of $[-2.0 \ -2.0 \ 1.0]$ and a light location of $[3.0 \ -3.0 \ -5.0]$, what is the light direction? (Remember to normalize.)
743. What is the normal to a triangle defined by vertices $[-3.0 \ 0.0 \ 1.0]$, $[-1.0 \ -1.0 \ -2.0]$, and $[3.0 \ -5.0 \ 2.0]$ (listed in the order of positive rotation)?
744. Point p has a surface color of $[1.0 \ 4.0 \ 4.0]$ and a surface normal of $[0.7 \ 0.22 \ 0.68]$. Given a light of color $[1.0 \ 2.0 \ 2.5]$ and direction $[0.32 \ 0.44 \ 0.84]$, and a view direction $[0.77 \ 0.37 \ 0.52]$, 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 $[0.7 \ 1.3 \ 1.0]$ and a surface normal of $[0.78 \ 0.52 \ 0.35]$. Given a light of color $[1.0 \ 2.0 \ 1.0]$ and direction $[0.58 \ 0.65 \ 0.49]$, a view direction $[0.22 \ 0.44 \ 0.87]$, and an ambient color $[1.0 \ 5.0 \ 4.0]$, what will be p's final color, with a Phong exponent of 2?
746. What is the normal to a triangle defined by vertices $[4.0 \ -3.0 \ -3.0]$, $[-5.0 \ 3.0 \ 0.0]$, and $[3.0 \ 3.0 \ -2.0]$ (listed in the order of positive rotation)?
747. What is the normal to a triangle defined by vertices $[0.0 \ -5.0 \ -4.0]$, $[-5.0 \ -5.0 \ -3.0]$, and $[1.0 \ -3.0 \ 0.0]$ (listed in the order of positive rotation)?

748. Point p has a surface color of $[0.3 \ 1.7 \ 1.0]$ and a surface normal of $[0.37 \ 0.23 \ 0.9]$. Given a light of color $[4.0 \ 1.0 \ 1.0]$ and direction $[0.2 \ 0.58 \ 0.79]$, what will be the diffuse component of p 's final color?
749. Given a point location of $[3.0 \ 4.0 \ -1.0]$ and a light location of $[-2.0 \ -2.0 \ -1.0]$, what is the light direction? (Remember to normalize.)
750. What is the normal to a triangle defined by vertices $[0.0 \ 3.0 \ 4.0]$, $[1.0 \ -4.0 \ 1.0]$, and $[-4.0 \ -2.0 \ 2.0]$ (listed in the order of positive rotation)?
751. Point p has a surface color of $[1.2 \ 1.2 \ 1.0]$ and a surface normal of $[0.21 \ 0.5 \ 0.84]$. Given a light of color $[1.0 \ 0.3 \ 0.3]$ and direction $[0.2 \ 0.55 \ 0.81]$, and a view direction $[0.49 \ 0.65 \ 0.58]$, 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 $[2.0 \ 0.0 \ 0.0]$, $[-4.0 \ 2.0 \ -2.0]$, and $[1.0 \ 2.0 \ -1.0]$ (listed in the order of positive rotation)?
753. Point p has a surface color of $[1.0 \ 1.2 \ 0.2]$ and a surface normal of $[0.6 \ 0.8 \ 0.0]$. Given a light of color $[2.0 \ 1.0 \ 2.0]$ and direction $[0.77 \ 0.52 \ 0.37]$, a view direction $[0.52 \ 0.78 \ 0.35]$, and an ambient color $[1.0 \ 2.5 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
754. What is the normal to a triangle defined by vertices $[-3.0 \ -2.0 \ -1.0]$, $[-1.0 \ 0.0 \ -4.0]$, and $[3.0 \ 1.0 \ 1.0]$ (listed in the order of positive rotation)?
755. Point p has a surface color of $[0.5 \ 1.0 \ 1.0]$ and a surface normal of $[0.79 \ 0.58 \ 0.2]$. Given a light of color $[0.5 \ 0.0 \ 1.0]$ and direction $[0.5 \ 0.84 \ 0.21]$, and a view direction $[0.6 \ 0.0 \ 0.8]$, 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 $[1.0 \ 0.0 \ 0.0]$ and a surface normal of $[0.11 \ 0.59 \ 0.8]$. Given a light of color $[1.0 \ 1.0 \ 0.0]$ and direction $[0.69 \ 0.48 \ 0.54]$, what will be the diffuse component of p 's final color?
757. Given a point location of $[-4.0 \ 2.0 \ -2.0]$ and a light location of $[2.0 \ -5.0 \ 1.0]$, what is the light direction? (Remember to normalize.)
758. Point p has a surface color of $[0.2 \ 1.0 \ 1.0]$ and a surface normal of $[0.58 \ 0.49 \ 0.65]$. Given a light of color $[1.0 \ 1.0 \ 1.0]$ and direction $[0.48 \ 0.77 \ 0.42]$, and a view direction $[0.54 \ 0.69 \ 0.48]$, 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 $[2.0 \ 0.5 \ 1.0]$ and a surface normal of $[0.49 \ 0.65 \ 0.58]$. Given a light of color $[1.0 \ 0.5 \ 0.5]$ and direction $[0.9 \ 0.37 \ 0.23]$, what will be the diffuse component of p 's final color?
760. What is the normal to a triangle defined by vertices $[-5.0 \ -4.0 \ -4.0]$, $[-1.0 \ 2.0 \ 4.0]$, and $[-5.0 \ -2.0 \ -2.0]$ (listed in the order of positive rotation)?
761. Point p has a surface color of $[0.3 \ 0.7 \ 1.0]$ and a surface normal of $[0.52 \ 0.35 \ 0.78]$. Given a light of color $[2.5 \ 1.0 \ 1.5]$ and direction $[0.8 \ 0.59 \ 0.11]$, and a view direction

- $[0.77 \ 0.48 \ 0.42]$, 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 $[1.0 \ 0.7 \ 0.0]$ and a surface normal of $[0.65 \ 0.58 \ 0.49]$. Given a light of color $[1.0 \ 4.0 \ 0.0]$ and direction $[0.65 \ 0.49 \ 0.58]$, a view direction $[0.37 \ 0.77 \ 0.52]$, and an ambient color $[0.2 \ 0.0 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
763. What is the normal to a triangle defined by vertices $[-5.0 \ 4.0 \ 3.0]$, $[3.0 \ -4.0 \ 4.0]$, and $[2.0 \ -1.0 \ -3.0]$ (listed in the order of positive rotation)?
764. What is the normal to a triangle defined by vertices $[-5.0 \ 0.0 \ 2.0]$, $[-4.0 \ -5.0 \ 0.0]$, and $[-4.0 \ 3.0 \ 3.0]$ (listed in the order of positive rotation)?
765. Point p has a surface color of $[1.0 \ 0.2 \ 0.2]$ and a surface normal of $[0.49 \ 0.65 \ 0.58]$. Given a light of color $[0.3 \ 1.0 \ 1.0]$ and direction $[0.87 \ 0.22 \ 0.44]$, a view direction $[0.54 \ 0.58 \ 0.61]$, and an ambient color $[2.0 \ 1.0 \ 2.0]$, what will be p's final color, with a Phong exponent of 2?
766. Point p has a surface color of $[1.0 \ 0.0 \ 1.0]$ and a surface normal of $[0.8 \ 0.0 \ 0.6]$. Given a light of color $[3.0 \ 1.0 \ 4.0]$ and direction $[0.58 \ 0.79 \ 0.2]$, a view direction $[0.8 \ 0.59 \ 0.11]$, and an ambient color $[1.0 \ 0.3 \ 0.3]$, what will be p's final color, with a Phong exponent of 2?
767. Point p has a surface color of $[1.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.6 \ 0.01 \ 0.8]$. Given a light of color $[1.0 \ 1.0 \ 0.0]$ and direction $[0.8 \ 0.01 \ 0.6]$, what will be the diffuse component of p's final color?
768. Point p has a surface color of $[0.7 \ 1.0 \ 0.3]$ and a surface normal of $[0.8 \ 0.01 \ 0.6]$. Given a light of color $[1.0 \ 4.0 \ 0.0]$ and direction $[0.78 \ 0.59 \ 0.21]$, and a view direction $[0.42 \ 0.68 \ 0.6]$, what will be the specular component of p's final color, with a Phong exponent of 2?
769. Given a point location of $[3.0 \ 0.0 \ 3.0]$ and a light location of $[-1.0 \ 1.0 \ -5.0]$, what is the light direction? (Remember to normalize.)
770. Point p has a surface color of $[2.0 \ 2.5 \ 1.0]$ and a surface normal of $[0.2 \ 0.55 \ 0.81]$. Given a light of color $[1.0 \ 1.0 \ 1.5]$ and direction $[0.88 \ 0.3 \ 0.37]$, what will be the diffuse component of p's final color?
771. Point p has a surface color of $[0.0 \ 4.0 \ 1.0]$ and a surface normal of $[0.65 \ 0.49 \ 0.58]$. Given a light of color $[1.0 \ 1.0 \ 1.0]$ and direction $[0.6 \ 0.0 \ 0.8]$, a view direction $[0.4 \ 0.48 \ 0.78]$, and an ambient color $[2.0 \ 5.0 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
772. Given a point location of $[-5.0 \ 1.0 \ -4.0]$ and a light location of $[2.0 \ -3.0 \ -2.0]$, what is the light direction? (Remember to normalize.)
773. Point p has a surface color of $[3.0 \ 1.0 \ 4.0]$ and a surface normal of $[0.6 \ 0.8 \ 0.01]$. Given a light of color $[1.0 \ 4.0 \ 1.0]$ and direction $[0.78 \ 0.52 \ 0.35]$, a view direction $[0.58 \ 0.79 \ 0.2]$, and an ambient color $[1.0 \ 1.0 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?

774. Given a point location of $[0.0 \ -1.0 \ 3.0]$ and a light location of $[3.0 \ -5.0 \ 0.0]$, what is the light direction? (Remember to normalize.)
775. Given a point location of $[-3.0 \ -2.0 \ 2.0]$ and a light location of $[-5.0 \ -1.0 \ -4.0]$, what is the light direction? (Remember to normalize.)
776. What is the normal to a triangle defined by vertices $[3.0 \ -1.0 \ -5.0]$, $[4.0 \ 3.0 \ -5.0]$, and $[2.0 \ -2.0 \ -4.0]$ (listed in the order of positive rotation)?
777. Point p has a surface color of $[4.0 \ 3.0 \ 1.0]$ and a surface normal of $[0.59 \ 0.21 \ 0.78]$. Given a light of color $[1.0 \ 0.3 \ 0.0]$ and direction $[0.37 \ 0.88 \ 0.3]$, what will be the diffuse component of p's final color?
778. Point p has a surface color of $[2.0 \ 1.0 \ 2.0]$ and a surface normal of $[0.58 \ 0.2 \ 0.79]$. Given a light of color $[0.8 \ 1.0 \ 0.8]$ and direction $[0.8 \ 0.01 \ 0.6]$, what will be the diffuse component of p's final color?
779. What is the normal to a triangle defined by vertices $[-2.0 \ -3.0 \ 0.0]$, $[3.0 \ -5.0 \ 3.0]$, and $[-3.0 \ 1.0 \ -2.0]$ (listed in the order of positive rotation)?
780. Point p has a surface color of $[1.7 \ 1.3 \ 1.0]$ and a surface normal of $[0.37 \ 0.3 \ 0.88]$. Given a light of color $[1.0 \ 1.0 \ 0.5]$ and direction $[0.54 \ 0.48 \ 0.69]$, a view direction $[0.65 \ 0.58 \ 0.49]$, and an ambient color $[0.8 \ 1.0 \ 0.8]$, what will be p's final color, with a Phong exponent of 2?
781. What is the normal to a triangle defined by vertices $[4.0 \ 2.0 \ -1.0]$, $[1.0 \ 4.0 \ 1.0]$, and $[0.0 \ 4.0 \ 2.0]$ (listed in the order of positive rotation)?
782. Given a point location of $[-1.0 \ -5.0 \ 4.0]$ and a light location of $[4.0 \ -1.0 \ -1.0]$, what is the light direction? (Remember to normalize.)
783. Point p has a surface color of $[1.0 \ 0.0 \ 2.5]$ and a surface normal of $[0.37 \ 0.52 \ 0.77]$. Given a light of color $[2.0 \ 3.0 \ 1.0]$ and direction $[0.9 \ 0.23 \ 0.37]$, a view direction $[0.54 \ 0.58 \ 0.61]$, and an ambient color $[0.7 \ 1.0 \ 0.3]$, what will be p's final color, with a Phong exponent of 2?
784. Point p has a surface color of $[2.0 \ 1.0 \ 2.0]$ and a surface normal of $[0.6 \ 0.42 \ 0.68]$. Given a light of color $[1.0 \ 1.0 \ 1.0]$ and direction $[0.55 \ 0.3 \ 0.78]$, what will be the diffuse component of p's final color?
785. Point p has a surface color of $[3.0 \ 2.0 \ 1.0]$ and a surface normal of $[0.8 \ 0.0 \ 0.6]$. Given a light of color $[0.5 \ 1.0 \ 1.2]$ and direction $[0.55 \ 0.78 \ 0.3]$, what will be the diffuse component of p's final color?
786. Point p has a surface color of $[0.8 \ 0.2 \ 1.0]$ and a surface normal of $[0.77 \ 0.52 \ 0.37]$. Given a light of color $[1.0 \ 0.3 \ 0.3]$ and direction $[0.44 \ 0.22 \ 0.87]$, what will be the diffuse component of p's final color?
787. Point p has a surface color of $[0.2 \ 1.0 \ 0.2]$ and a surface normal of $[0.52 \ 0.78 \ 0.35]$. Given a light of color $[0.5 \ 1.0 \ 0.2]$ and direction $[0.6 \ 0.01 \ 0.8]$, what will be the diffuse component of p's final color?

788. Given a point location of $[3.0 \ -1.0 \ 0.0]$ and a light location of $[-4.0 \ 4.0 \ 3.0]$, what is the light direction? (Remember to normalize.)
789. Point p has a surface color of $[0.7 \ 0.7 \ 1.0]$ and a surface normal of $[0.48 \ 0.69 \ 0.54]$. Given a light of color $[5.0 \ 1.0 \ 2.0]$ and direction $[0.84 \ 0.44 \ 0.32]$, what will be the diffuse component of p's final color?
790. What is the normal to a triangle defined by vertices $[3.0 \ -2.0 \ -3.0]$, $[2.0 \ 3.0 \ -5.0]$, and $[-1.0 \ 2.0 \ -3.0]$ (listed in the order of positive rotation)?
791. What is the normal to a triangle defined by vertices $[1.0 \ 1.0 \ 1.0]$, $[3.0 \ -2.0 \ -4.0]$, and $[-5.0 \ 2.0 \ -4.0]$ (listed in the order of positive rotation)?
792. Given a point location of $[3.0 \ 2.0 \ 1.0]$ and a light location of $[2.0 \ 1.0 \ 2.0]$, what is the light direction? (Remember to normalize.)
793. What is the normal to a triangle defined by vertices $[-4.0 \ -3.0 \ -2.0]$, $[-1.0 \ 2.0 \ -5.0]$, and $[-3.0 \ 4.0 \ -3.0]$ (listed in the order of positive rotation)?
794. What is the normal to a triangle defined by vertices $[-5.0 \ -4.0 \ -1.0]$, $[1.0 \ -3.0 \ -2.0]$, and $[0.0 \ 1.0 \ -4.0]$ (listed in the order of positive rotation)?
795. Point p has a surface color of $[1.0 \ 1.0 \ 0.5]$ and a surface normal of $[0.58 \ 0.61 \ 0.54]$. Given a light of color $[0.5 \ 1.0 \ 0.5]$ and direction $[0.52 \ 0.35 \ 0.78]$, what will be the diffuse component of p's final color?
796. Given a point location of $[1.0 \ -1.0 \ 1.0]$ and a light location of $[4.0 \ 1.0 \ 4.0]$, what is the light direction? (Remember to normalize.)
797. Point p has a surface color of $[1.0 \ 0.5 \ 0.5]$ and a surface normal of $[0.44 \ 0.22 \ 0.87]$. Given a light of color $[1.0 \ 5.0 \ 2.0]$ and direction $[0.55 \ 0.3 \ 0.78]$, a view direction $[0.77 \ 0.48 \ 0.42]$, and an ambient color $[1.0 \ 0.5 \ 0.5]$, what will be p's final color, with a Phong exponent of 2?
798. Point p has a surface color of $[0.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.48 \ 0.42 \ 0.77]$. Given a light of color $[1.3 \ 0.7 \ 1.0]$ and direction $[0.54 \ 0.58 \ 0.61]$, what will be the diffuse component of p's final color?
799. Given a point location of $[-5.0 \ -2.0 \ -2.0]$ and a light location of $[-2.0 \ -5.0 \ 0.0]$, what is the light direction? (Remember to normalize.)
800. What is the normal to a triangle defined by vertices $[-3.0 \ 1.0 \ 0.0]$, $[-2.0 \ -4.0 \ -4.0]$, and $[-5.0 \ 1.0 \ 2.0]$ (listed in the order of positive rotation)?
801. What is the normal to a triangle defined by vertices $[4.0 \ -5.0 \ 3.0]$, $[4.0 \ -4.0 \ -3.0]$, and $[-3.0 \ -2.0 \ 0.0]$ (listed in the order of positive rotation)?
802. Point p has a surface color of $[0.0 \ 1.0 \ 3.0]$ and a surface normal of $[0.49 \ 0.58 \ 0.65]$. Given a light of color $[0.0 \ 0.2 \ 1.0]$ and direction $[0.11 \ 0.59 \ 0.8]$, what will be the diffuse component of p's final color?
803. Given a point location of $[2.0 \ 1.0 \ 0.0]$ and a light location of $[-4.0 \ 2.0 \ -1.0]$, what is the light direction? (Remember to normalize.)

804. Point p has a surface color of $[1.0 \ 4.0 \ 0.0]$ and a surface normal of $[0.79 \ 0.58 \ 0.2]$. Given a light of color $[0.2 \ 1.0 \ 0.5]$ and direction $[0.21 \ 0.78 \ 0.59]$, what will be the diffuse component of p's final color?
805. What is the normal to a triangle defined by vertices $[4.0 \ -2.0 \ -2.0]$, $[2.0 \ -4.0 \ 1.0]$, and $[-5.0 \ -1.0 \ -5.0]$ (listed in the order of positive rotation)?
806. Point p has a surface color of $[0.3 \ 1.0 \ 0.0]$ and a surface normal of $[0.68 \ 0.7 \ 0.22]$. Given a light of color $[0.8 \ 1.0 \ 0.8]$ and direction $[0.22 \ 0.87 \ 0.44]$, and a view direction $[0.69 \ 0.54 \ 0.48]$, 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 $[1.0 \ 0.8 \ 0.0]$ and a surface normal of $[0.78 \ 0.52 \ 0.35]$. Given a light of color $[4.0 \ 1.0 \ 1.0]$ and direction $[0.8 \ 0.6 \ 0.01]$, what will be the diffuse component of p's final color?
808. Point p has a surface color of $[1.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.78 \ 0.55 \ 0.3]$. Given a light of color $[0.0 \ 1.0 \ 0.0]$ and direction $[0.77 \ 0.52 \ 0.37]$, and a view direction $[0.58 \ 0.61 \ 0.54]$, 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 $[2.0 \ 3.0 \ -1.0]$, $[-5.0 \ -2.0 \ -4.0]$, and $[-1.0 \ 4.0 \ 2.0]$ (listed in the order of positive rotation)?
810. Point p has a surface color of $[3.0 \ 1.0 \ 0.0]$ and a surface normal of $[0.3 \ 0.37 \ 0.88]$. Given a light of color $[2.5 \ 0.0 \ 1.0]$ and direction $[0.8 \ 0.11 \ 0.59]$, a view direction $[0.4 \ 0.48 \ 0.78]$, and an ambient color $[2.0 \ 1.0 \ 0.5]$, what will be p's final color, with a Phong exponent of 2?
811. Point p has a surface color of $[1.0 \ 2.0 \ 1.0]$ and a surface normal of $[0.6 \ 0.01 \ 0.8]$. Given a light of color $[0.0 \ 5.0 \ 1.0]$ and direction $[0.9 \ 0.23 \ 0.37]$, and a view direction $[0.61 \ 0.54 \ 0.58]$, 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 $[1.0 \ 1.3 \ 1.3]$ and a surface normal of $[0.68 \ 0.7 \ 0.22]$. Given a light of color $[1.0 \ 2.0 \ 2.0]$ and direction $[0.32 \ 0.44 \ 0.84]$, a view direction $[0.48 \ 0.77 \ 0.42]$, and an ambient color $[0.0 \ 0.8 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
813. What is the normal to a triangle defined by vertices $[-3.0 \ -2.0 \ 4.0]$, $[-4.0 \ -4.0 \ 0.0]$, and $[-3.0 \ 0.0 \ -2.0]$ (listed in the order of positive rotation)?
814. Given a point location of $[-2.0 \ -5.0 \ 4.0]$ and a light location of $[4.0 \ 2.0 \ 0.0]$, what is the light direction? (Remember to normalize.)
815. Point p has a surface color of $[1.0 \ 0.0 \ 1.0]$ and a surface normal of $[0.42 \ 0.77 \ 0.48]$. Given a light of color $[4.0 \ 0.0 \ 1.0]$ and direction $[0.37 \ 0.77 \ 0.52]$, a view direction $[0.59 \ 0.8 \ 0.11]$, and an ambient color $[1.0 \ 0.0 \ 2.0]$, what will be p's final color, with a Phong exponent of 2?
816. Given a point location of $[-2.0 \ -3.0 \ -2.0]$ and a light location of $[-1.0 \ -1.0 \ -4.0]$, what is the light direction? (Remember to normalize.)

817. Given a point location of $[-5.0 \ -4.0 \ -2.0]$ and a light location of $[-4.0 \ 3.0 \ -4.0]$, what is the light direction? (Remember to normalize.)
818. Given a point location of $[-4.0 \ 4.0 \ -3.0]$ and a light location of $[2.0 \ 1.0 \ 1.0]$, what is the light direction? (Remember to normalize.)
819. Point p has a surface color of $[1.0 \ 1.7 \ 0.0]$ and a surface normal of $[0.2 \ 0.55 \ 0.81]$. Given a light of color $[2.5 \ 1.0 \ 2.0]$ and direction $[0.48 \ 0.69 \ 0.54]$, and a view direction $[0.81 \ 0.55 \ 0.2]$, what will be the specular component of p's final color, with a Phong exponent of 2?
820. Given a point location of $[4.0 \ 0.0 \ -1.0]$ and a light location of $[-1.0 \ -2.0 \ 1.0]$, what is the light direction? (Remember to normalize.)
821. Point p has a surface color of $[1.0 \ 1.0 \ 2.0]$ and a surface normal of $[0.59 \ 0.78 \ 0.21]$. Given a light of color $[1.0 \ 5.0 \ 4.0]$ and direction $[0.8 \ 0.11 \ 0.59]$, what will be the diffuse component of p's final color?
822. Point p has a surface color of $[1.0 \ 3.0 \ 0.0]$ and a surface normal of $[0.59 \ 0.8 \ 0.11]$. Given a light of color $[1.0 \ 4.0 \ 0.0]$ and direction $[0.78 \ 0.55 \ 0.3]$, and a view direction $[0.65 \ 0.49 \ 0.58]$, 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 $[0.5 \ 2.0 \ 1.0]$ and a surface normal of $[0.49 \ 0.58 \ 0.65]$. Given a light of color $[1.0 \ 1.5 \ 0.5]$ and direction $[0.77 \ 0.52 \ 0.37]$, what will be the diffuse component of p's final color?
824. Point p has a surface color of $[1.0 \ 4.0 \ 1.0]$ and a surface normal of $[0.55 \ 0.3 \ 0.78]$. Given a light of color $[0.5 \ 1.0 \ 0.8]$ and direction $[0.69 \ 0.54 \ 0.48]$, a view direction $[0.9 \ 0.23 \ 0.37]$, and an ambient color $[3.0 \ 5.0 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
825. Point p has a surface color of $[1.0 \ 4.0 \ 2.0]$ and a surface normal of $[0.8 \ 0.6 \ 0.0]$. Given a light of color $[0.0 \ 5.0 \ 1.0]$ and direction $[0.22 \ 0.87 \ 0.44]$, what will be the diffuse component of p's final color?
826. What is the normal to a triangle defined by vertices $[4.0 \ 4.0 \ -5.0]$, $[-2.0 \ 3.0 \ 2.0]$, and $[-1.0 \ 2.0 \ -4.0]$ (listed in the order of positive rotation)?
827. Point p has a surface color of $[1.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.42 \ 0.6 \ 0.68]$. Given a light of color $[5.0 \ 1.0 \ 4.0]$ and direction $[0.44 \ 0.32 \ 0.84]$, what will be the diffuse component of p's final color?
828. What is the normal to a triangle defined by vertices $[0.0 \ 4.0 \ -5.0]$, $[1.0 \ 3.0 \ -3.0]$, and $[4.0 \ -3.0 \ 1.0]$ (listed in the order of positive rotation)?
829. Given a point location of $[-2.0 \ -4.0 \ 2.0]$ and a light location of $[-4.0 \ 3.0 \ -1.0]$, what is the light direction? (Remember to normalize.)
830. Point p has a surface color of $[1.3 \ 1.0 \ 0.7]$ and a surface normal of $[0.32 \ 0.84 \ 0.44]$. Given a light of color $[1.0 \ 1.0 \ 5.0]$ and direction $[0.44 \ 0.84 \ 0.32]$, a view direction $[0.5 \ 0.21 \ 0.84]$, and an ambient color $[2.5 \ 0.5 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?

831. Point p has a surface color of $[1.7 \ 1.0 \ 1.0]$ and a surface normal of $[0.78 \ 0.55 \ 0.3]$. Given a light of color $[0.3 \ 1.0 \ 0.0]$ and direction $[0.78 \ 0.35 \ 0.52]$, and a view direction $[0.7 \ 0.22 \ 0.68]$, 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 $[0.7 \ 0.7 \ 1.0]$ and a surface normal of $[0.58 \ 0.61 \ 0.54]$. Given a light of color $[4.0 \ 2.0 \ 1.0]$ and direction $[0.35 \ 0.78 \ 0.52]$, what will be the diffuse component of p 's final color?
833. Point p has a surface color of $[1.0 \ 1.0 \ 0.7]$ and a surface normal of $[0.6 \ 0.0 \ 0.8]$. Given a light of color $[1.0 \ 1.3 \ 1.3]$ and direction $[0.22 \ 0.87 \ 0.44]$, what will be the diffuse component of p 's final color?
834. Given a point location of $[0.0 \ -2.0 \ -1.0]$ and a light location of $[-3.0 \ 0.0 \ -2.0]$, what is the light direction? (Remember to normalize.)
835. Point p has a surface color of $[0.0 \ 0.5 \ 1.0]$ and a surface normal of $[0.48 \ 0.69 \ 0.54]$. Given a light of color $[0.3 \ 1.0 \ 1.3]$ and direction $[0.0 \ 0.6 \ 0.8]$, a view direction $[0.8 \ 0.6 \ 0.01]$, and an ambient color $[1.0 \ 1.0 \ 0.0]$, what will be p 's final color, with a Phong exponent of 2?
836. Point p has a surface color of $[5.0 \ 2.0 \ 1.0]$ and a surface normal of $[0.9 \ 0.37 \ 0.23]$. Given a light of color $[0.5 \ 0.5 \ 1.0]$ and direction $[0.4 \ 0.78 \ 0.48]$, and a view direction $[0.11 \ 0.8 \ 0.59]$, 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 $[0.8 \ 1.0 \ 0.5]$ and a surface normal of $[0.9 \ 0.37 \ 0.23]$. Given a light of color $[1.0 \ 1.0 \ 5.0]$ and direction $[0.37 \ 0.9 \ 0.23]$, and a view direction $[0.81 \ 0.55 \ 0.2]$, 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 $[1.5 \ 1.0 \ 2.0]$ and a surface normal of $[0.87 \ 0.22 \ 0.44]$. Given a light of color $[1.0 \ 4.0 \ 1.0]$ and direction $[0.6 \ 0.42 \ 0.68]$, a view direction $[0.84 \ 0.5 \ 0.21]$, and an ambient color $[5.0 \ 1.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
839. What is the normal to a triangle defined by vertices $[0.0 \ 4.0 \ -4.0]$, $[-1.0 \ 4.0 \ 4.0]$, and $[-1.0 \ 4.0 \ -3.0]$ (listed in the order of positive rotation)?
840. Point p has a surface color of $[1.0 \ 0.3 \ 1.0]$ and a surface normal of $[0.48 \ 0.69 \ 0.54]$. Given a light of color $[2.0 \ 5.0 \ 1.0]$ and direction $[0.81 \ 0.2 \ 0.55]$, what will be the diffuse component of p 's final color?
841. Point p has a surface color of $[1.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.78 \ 0.35 \ 0.52]$. Given a light of color $[1.0 \ 1.0 \ 1.0]$ and direction $[0.59 \ 0.8 \ 0.11]$, a view direction $[0.35 \ 0.78 \ 0.52]$, and an ambient color $[0.5 \ 1.0 \ 0.5]$, what will be p 's final color, with a Phong exponent of 2?
842. Point p has a surface color of $[0.5 \ 1.0 \ 0.8]$ and a surface normal of $[0.69 \ 0.48 \ 0.54]$. Given a light of color $[1.0 \ 5.0 \ 5.0]$ and direction $[0.42 \ 0.77 \ 0.48]$, and a view direction $[0.52 \ 0.78 \ 0.35]$, 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 $[2.0 \ 2.5 \ 1.0]$ and a surface normal of $[0.8 \ 0.0 \ 0.6]$. Given a light of color $[0.8 \ 1.0 \ 0.5]$ and direction $[0.32 \ 0.84 \ 0.44]$, and a view direction $[0.49 \ 0.65 \ 0.58]$, 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 $[4.0 \ 1.0 \ 4.0]$ and a surface normal of $[0.35 \ 0.52 \ 0.78]$. Given a light of color $[1.0 \ 1.0 \ 0.0]$ and direction $[0.35 \ 0.52 \ 0.78]$, what will be the diffuse component of p 's final color?
845. Point p has a surface color of $[4.0 \ 2.0 \ 1.0]$ and a surface normal of $[0.78 \ 0.55 \ 0.3]$. Given a light of color $[1.0 \ 4.0 \ 1.0]$ and direction $[0.35 \ 0.78 \ 0.52]$, and a view direction $[0.54 \ 0.61 \ 0.58]$, what will be the specular component of p 's final color, with a Phong exponent of 2?
846. Given a point location of $[-5.0 \ -4.0 \ 4.0]$ and a light location of $[0.0 \ 0.0 \ -5.0]$, what is the light direction? (Remember to normalize.)
847. What is the normal to a triangle defined by vertices $[-5.0 \ -3.0 \ -5.0]$, $[-3.0 \ 4.0 \ -1.0]$, and $[1.0 \ -1.0 \ -1.0]$ (listed in the order of positive rotation)?
848. Point p has a surface color of $[0.0 \ 3.0 \ 1.0]$ and a surface normal of $[0.58 \ 0.2 \ 0.79]$. Given a light of color $[1.0 \ 0.0 \ 0.2]$ and direction $[0.5 \ 0.21 \ 0.84]$, a view direction $[0.4 \ 0.48 \ 0.78]$, and an ambient color $[1.5 \ 1.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
849. Point p has a surface color of $[1.0 \ 5.0 \ 4.0]$ and a surface normal of $[0.55 \ 0.78 \ 0.3]$. Given a light of color $[1.2 \ 0.2 \ 1.0]$ and direction $[0.84 \ 0.5 \ 0.21]$, what will be the diffuse component of p 's final color?
850. Given a point location of $[-5.0 \ 0.0 \ -5.0]$ and a light location of $[4.0 \ 2.0 \ 4.0]$, what is the light direction? (Remember to normalize.)
851. Point p has a surface color of $[1.0 \ 2.0 \ 0.5]$ and a surface normal of $[0.32 \ 0.44 \ 0.84]$. Given a light of color $[1.2 \ 0.8 \ 1.0]$ and direction $[0.6 \ 0.8 \ 0.01]$, a view direction $[0.37 \ 0.9 \ 0.23]$, and an ambient color $[1.0 \ 1.0 \ 2.0]$, what will be p 's final color, with a Phong exponent of 2?
852. Point p has a surface color of $[2.0 \ 2.0 \ 1.0]$ and a surface normal of $[0.2 \ 0.79 \ 0.58]$. Given a light of color $[1.0 \ 0.8 \ 0.8]$ and direction $[0.78 \ 0.55 \ 0.3]$, what will be the diffuse component of p 's final color?
853. Point p has a surface color of $[0.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.78 \ 0.3 \ 0.55]$. Given a light of color $[1.0 \ 0.3 \ 0.0]$ and direction $[0.3 \ 0.37 \ 0.88]$, and a view direction $[0.32 \ 0.84 \ 0.44]$, 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 $[-5.0 \ -4.0 \ -3.0]$, $[-2.0 \ -4.0 \ 3.0]$, and $[4.0 \ 0.0 \ 3.0]$ (listed in the order of positive rotation)?
855. Point p has a surface color of $[1.0 \ 1.0 \ 0.5]$ and a surface normal of $[0.22 \ 0.7 \ 0.68]$. Given a light of color $[1.0 \ 1.0 \ 1.5]$ and direction $[0.3 \ 0.88 \ 0.37]$, a view direction $[0.42 \ 0.48 \ 0.77]$, and an ambient color $[3.0 \ 1.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?

856. Point p has a surface color of $[1.0 \ 5.0 \ 4.0]$ and a surface normal of $[0.44 \ 0.22 \ 0.87]$. Given a light of color $[2.0 \ 5.0 \ 1.0]$ and direction $[0.48 \ 0.42 \ 0.77]$, a view direction $[0.78 \ 0.4 \ 0.48]$, and an ambient color $[1.0 \ 0.0 \ 3.0]$, what will be p 's final color, with a Phong exponent of 2?
857. Point p has a surface color of $[1.0 \ 1.0 \ 4.0]$ and a surface normal of $[0.0 \ 0.6 \ 0.8]$. Given a light of color $[1.0 \ 1.7 \ 1.0]$ and direction $[0.61 \ 0.54 \ 0.58]$, what will be the diffuse component of p 's final color?
858. Point p has a surface color of $[3.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.21 \ 0.84 \ 0.5]$. Given a light of color $[2.0 \ 1.0 \ 1.0]$ and direction $[0.88 \ 0.37 \ 0.3]$, and a view direction $[0.78 \ 0.59 \ 0.21]$, 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 $[1.0 \ 1.3 \ 1.0]$ and a surface normal of $[0.68 \ 0.7 \ 0.22]$. Given a light of color $[1.7 \ 1.0 \ 0.0]$ and direction $[0.65 \ 0.58 \ 0.49]$, a view direction $[0.42 \ 0.48 \ 0.77]$, and an ambient color $[1.0 \ 1.0 \ 1.7]$, what will be p 's final color, with a Phong exponent of 2?
860. Point p has a surface color of $[1.0 \ 1.2 \ 0.5]$ and a surface normal of $[0.48 \ 0.78 \ 0.4]$. Given a light of color $[0.5 \ 1.0 \ 1.5]$ and direction $[0.37 \ 0.3 \ 0.88]$, a view direction $[0.78 \ 0.3 \ 0.55]$, and an ambient color $[1.0 \ 0.3 \ 1.7]$, what will be p 's final color, with a Phong exponent of 2?
861. Given a point location of $[-2.0 \ -2.0 \ -2.0]$ and a light location of $[0.0 \ -4.0 \ 0.0]$, what is the light direction? (Remember to normalize.)
862. What is the normal to a triangle defined by vertices $[-2.0 \ -5.0 \ -5.0]$, $[4.0 \ -3.0 \ -3.0]$, and $[3.0 \ -5.0 \ -2.0]$ (listed in the order of positive rotation)?
863. Point p has a surface color of $[1.0 \ 0.0 \ 0.3]$ and a surface normal of $[0.0 \ 0.8 \ 0.6]$. Given a light of color $[2.0 \ 1.0 \ 0.5]$ and direction $[0.42 \ 0.68 \ 0.6]$, what will be the diffuse component of p 's final color?
864. What is the normal to a triangle defined by vertices $[-3.0 \ 3.0 \ -3.0]$, $[3.0 \ -1.0 \ 0.0]$, and $[-4.0 \ -5.0 \ -2.0]$ (listed in the order of positive rotation)?
865. Given a point location of $[0.0 \ 2.0 \ -2.0]$ and a light location of $[2.0 \ 2.0 \ -2.0]$, what is the light direction? (Remember to normalize.)
866. Point p has a surface color of $[1.0 \ 1.0 \ 0.0]$ and a surface normal of $[0.84 \ 0.44 \ 0.32]$. Given a light of color $[1.0 \ 1.0 \ 5.0]$ and direction $[0.59 \ 0.8 \ 0.11]$, a view direction $[0.3 \ 0.55 \ 0.78]$, and an ambient color $[0.0 \ 1.0 \ 2.0]$, what will be p 's final color, with a Phong exponent of 2?
867. Point p has a surface color of $[1.0 \ 0.0 \ 0.8]$ and a surface normal of $[0.49 \ 0.58 \ 0.65]$. Given a light of color $[1.0 \ 0.0 \ 1.0]$ and direction $[0.65 \ 0.49 \ 0.58]$, and a view direction $[0.22 \ 0.68 \ 0.7]$, what will be the specular component of p 's final color, with a Phong exponent of 2?
868. Given a point location of $[-3.0 \ 3.0 \ -4.0]$ and a light location of $[1.0 \ -5.0 \ -5.0]$, what is the light direction? (Remember to normalize.)

869. Point p has a surface color of $[1.7 \ 1.0 \ 1.0]$ and a surface normal of $[0.21 \ 0.84 \ 0.5]$. Given a light of color $[5.0 \ 0.0 \ 1.0]$ and direction $[0.59 \ 0.8 \ 0.11]$, a view direction $[0.44 \ 0.32 \ 0.84]$, and an ambient color $[1.0 \ 0.8 \ 0.5]$, what will be p's final color, with a Phong exponent of 2?
870. Point p has a surface color of $[1.3 \ 1.0 \ 1.3]$ and a surface normal of $[0.37 \ 0.88 \ 0.3]$. Given a light of color $[0.5 \ 1.0 \ 0.5]$ and direction $[0.58 \ 0.61 \ 0.54]$, a view direction $[0.78 \ 0.59 \ 0.21]$, and an ambient color $[1.0 \ 0.0 \ 0.7]$, what will be p's final color, with a Phong exponent of 2?
871. What is the normal to a triangle defined by vertices $[3.0 \ -2.0 \ 4.0]$, $[-1.0 \ 2.0 \ 4.0]$, and $[1.0 \ 0.0 \ 2.0]$ (listed in the order of positive rotation)?
872. Point p has a surface color of $[1.0 \ 1.0 \ 5.0]$ and a surface normal of $[0.8 \ 0.6 \ 0.0]$. Given a light of color $[2.5 \ 1.0 \ 2.0]$ and direction $[0.77 \ 0.52 \ 0.37]$, what will be the diffuse component of p's final color?
873. Point p has a surface color of $[1.0 \ 1.7 \ 1.0]$ and a surface normal of $[0.37 \ 0.3 \ 0.88]$. Given a light of color $[1.0 \ 0.7 \ 0.7]$ and direction $[0.58 \ 0.65 \ 0.49]$, what will be the diffuse component of p's final color?
874. Point p has a surface color of $[2.5 \ 1.0 \ 1.0]$ and a surface normal of $[0.59 \ 0.11 \ 0.8]$. Given a light of color $[1.0 \ 4.0 \ 5.0]$ and direction $[0.37 \ 0.52 \ 0.77]$, what will be the diffuse component of p's final color?
875. Point p has a surface color of $[1.0 \ 0.5 \ 0.5]$ and a surface normal of $[0.21 \ 0.59 \ 0.78]$. Given a light of color $[1.0 \ 1.0 \ 1.0]$ and direction $[0.3 \ 0.55 \ 0.78]$, and a view direction $[0.65 \ 0.49 \ 0.58]$, 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 $[3.0 \ 5.0 \ 1.0]$ and a surface normal of $[0.37 \ 0.23 \ 0.9]$. Given a light of color $[1.0 \ 1.0 \ 0.0]$ and direction $[0.55 \ 0.78 \ 0.3]$, what will be the diffuse component of p's final color?
877. Given a point location of $[1.0 \ 2.0 \ -4.0]$ and a light location of $[4.0 \ 0.0 \ -1.0]$, what is the light direction? (Remember to normalize.)
878. What is the normal to a triangle defined by vertices $[-4.0 \ 2.0 \ -1.0]$, $[-5.0 \ 3.0 \ 1.0]$, and $[0.0 \ -3.0 \ 4.0]$ (listed in the order of positive rotation)?
879. Given a point location of $[-2.0 \ -2.0 \ -5.0]$ and a light location of $[-4.0 \ -5.0 \ 1.0]$, what is the light direction? (Remember to normalize.)
880. Given a point location of $[-4.0 \ 1.0 \ 2.0]$ and a light location of $[0.0 \ 3.0 \ 2.0]$, what is the light direction? (Remember to normalize.)
881. Point p has a surface color of $[0.0 \ 0.0 \ 1.0]$ and a surface normal of $[0.87 \ 0.22 \ 0.44]$. Given a light of color $[0.0 \ 1.0 \ 1.0]$ and direction $[0.8 \ 0.11 \ 0.59]$, a view direction $[0.78 \ 0.21 \ 0.59]$, and an ambient color $[1.0 \ 0.0 \ 0.5]$, what will be p's final color, with a Phong exponent of 2?

882. Point p has a surface color of $[0.5 \ 1.0 \ 2.0]$ and a surface normal of $[0.81 \ 0.55 \ 0.2]$. Given a light of color $[1.3 \ 0.7 \ 1.0]$ and direction $[0.69 \ 0.48 \ 0.54]$, what will be the diffuse component of p's final color?
883. What is the normal to a triangle defined by vertices $[-3.0 \ 1.0 \ 3.0]$, $[-3.0 \ 2.0 \ 4.0]$, and $[-2.0 \ -3.0 \ -5.0]$ (listed in the order of positive rotation)?
884. Point p has a surface color of $[1.0 \ 1.7 \ 1.3]$ and a surface normal of $[0.42 \ 0.6 \ 0.68]$. Given a light of color $[4.0 \ 1.0 \ 2.0]$ and direction $[0.42 \ 0.77 \ 0.48]$, what will be the diffuse component of p's final color?
885. What is the normal to a triangle defined by vertices $[3.0 \ 4.0 \ -1.0]$, $[-2.0 \ -1.0 \ -4.0]$, and $[-1.0 \ -5.0 \ -1.0]$ (listed in the order of positive rotation)?
886. Point p has a surface color of $[0.2 \ 0.8 \ 1.0]$ and a surface normal of $[0.0 \ 0.6 \ 0.8]$. Given a light of color $[1.7 \ 1.0 \ 1.3]$ and direction $[0.65 \ 0.49 \ 0.58]$, a view direction $[0.2 \ 0.81 \ 0.55]$, and an ambient color $[0.5 \ 1.0 \ 0.0]$, what will be p's final color, with a Phong exponent of 2?
887. Point p has a surface color of $[1.0 \ 0.5 \ 1.0]$ and a surface normal of $[0.2 \ 0.55 \ 0.81]$. Given a light of color $[1.0 \ 1.0 \ 0.3]$ and direction $[0.87 \ 0.22 \ 0.44]$, what will be the diffuse component of p's final color?
888. Point p has a surface color of $[0.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.5 \ 0.84 \ 0.21]$. Given a light of color $[1.0 \ 1.0 \ 1.0]$ and direction $[0.81 \ 0.55 \ 0.2]$, and a view direction $[0.59 \ 0.21 \ 0.78]$, 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 $[0.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.3 \ 0.55 \ 0.78]$. Given a light of color $[3.0 \ 1.0 \ 0.0]$ and direction $[0.81 \ 0.55 \ 0.2]$, what will be the diffuse component of p's final color?
890. Point p has a surface color of $[2.5 \ 1.0 \ 1.0]$ and a surface normal of $[0.21 \ 0.5 \ 0.84]$. Given a light of color $[1.0 \ 0.0 \ 1.0]$ and direction $[0.6 \ 0.42 \ 0.68]$, a view direction $[0.65 \ 0.58 \ 0.49]$, and an ambient color $[3.0 \ 1.0 \ 4.0]$, what will be p's final color, with a Phong exponent of 2?
891. Given a point location of $[1.0 \ 4.0 \ -2.0]$ and a light location of $[3.0 \ -5.0 \ 3.0]$, what is the light direction? (Remember to normalize.)
892. Given a point location of $[1.0 \ 1.0 \ 3.0]$ and a light location of $[-2.0 \ -3.0 \ 3.0]$, what is the light direction? (Remember to normalize.)
893. Point p has a surface color of $[0.3 \ 1.0 \ 0.3]$ and a surface normal of $[0.44 \ 0.22 \ 0.87]$. Given a light of color $[1.0 \ 0.5 \ 1.0]$ and direction $[0.23 \ 0.9 \ 0.37]$, what will be the diffuse component of p's final color?
894. Point p has a surface color of $[1.5 \ 1.0 \ 1.5]$ and a surface normal of $[0.2 \ 0.58 \ 0.79]$. Given a light of color $[0.8 \ 1.0 \ 0.8]$ and direction $[0.48 \ 0.54 \ 0.69]$, a view direction $[0.22 \ 0.7 \ 0.68]$, and an ambient color $[4.0 \ 3.0 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?

895. Point p has a surface color of $[0.7 \ 0.0 \ 1.0]$ and a surface normal of $[0.84 \ 0.44 \ 0.32]$. Given a light of color $[1.0 \ 3.0 \ 4.0]$ and direction $[0.84 \ 0.32 \ 0.44]$, a view direction $[0.48 \ 0.77 \ 0.42]$, and an ambient color $[0.7 \ 1.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
896. Given a point location of $[-5.0 \ -5.0 \ 0.0]$ and a light location of $[-1.0 \ 3.0 \ -5.0]$, what is the light direction? (Remember to normalize.)
897. Point p has a surface color of $[0.0 \ 0.2 \ 1.0]$ and a surface normal of $[0.44 \ 0.87 \ 0.22]$. Given a light of color $[1.0 \ 4.0 \ 3.0]$ and direction $[0.5 \ 0.21 \ 0.84]$, a view direction $[0.55 \ 0.3 \ 0.78]$, and an ambient color $[1.0 \ 1.0 \ 3.0]$, what will be p 's final color, with a Phong exponent of 2?
898. Point p has a surface color of $[0.0 \ 0.0 \ 1.0]$ and a surface normal of $[0.44 \ 0.22 \ 0.87]$. Given a light of color $[3.0 \ 1.0 \ 3.0]$ and direction $[0.3 \ 0.78 \ 0.55]$, a view direction $[0.6 \ 0.0 \ 0.8]$, and an ambient color $[1.0 \ 1.0 \ 0.0]$, what will be p 's final color, with a Phong exponent of 2?
899. Given a point location of $[1.0 \ -4.0 \ 3.0]$ and a light location of $[-4.0 \ 2.0 \ -2.0]$, what is the light direction? (Remember to normalize.)
900. Given a point location of $[0.0 \ -5.0 \ 4.0]$ and a light location of $[-3.0 \ 0.0 \ 4.0]$, what is the light direction? (Remember to normalize.)
901. Given a point location of $[-2.0 \ -4.0 \ 1.0]$ and a light location of $[2.0 \ -3.0 \ -5.0]$, what is the light direction? (Remember to normalize.)
902. Given a point location of $[-5.0 \ -2.0 \ -4.0]$ and a light location of $[-1.0 \ -5.0 \ 1.0]$, what is the light direction? (Remember to normalize.)
903. Point p has a surface color of $[2.0 \ 1.0 \ 2.0]$ and a surface normal of $[0.3 \ 0.88 \ 0.37]$. Given a light of color $[1.5 \ 1.0 \ 0.5]$ and direction $[0.8 \ 0.6 \ 0.01]$, a view direction $[0.52 \ 0.37 \ 0.77]$, and an ambient color $[1.0 \ 0.0 \ 0.8]$, what will be p 's final color, with a Phong exponent of 2?
904. Point p has a surface color of $[1.0 \ 0.5 \ 0.5]$ and a surface normal of $[0.55 \ 0.3 \ 0.78]$. Given a light of color $[1.0 \ 0.2 \ 0.0]$ and direction $[0.81 \ 0.2 \ 0.55]$, and a view direction $[0.35 \ 0.78 \ 0.52]$, 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 $[1.0 \ -4.0 \ -5.0]$, $[0.0 \ -5.0 \ -5.0]$, and $[0.0 \ -5.0 \ -4.0]$ (listed in the order of positive rotation)?
906. Given a point location of $[-2.0 \ -3.0 \ -1.0]$ and a light location of $[2.0 \ 0.0 \ -4.0]$, what is the light direction? (Remember to normalize.)
907. Point p has a surface color of $[0.5 \ 0.5 \ 1.0]$ and a surface normal of $[0.3 \ 0.37 \ 0.88]$. Given a light of color $[1.0 \ 1.0 \ 1.0]$ and direction $[0.3 \ 0.88 \ 0.37]$, what will be the diffuse component of p 's final color?
908. Point p has a surface color of $[1.0 \ 1.7 \ 0.0]$ and a surface normal of $[0.3 \ 0.55 \ 0.78]$. Given a light of color $[1.0 \ 5.0 \ 1.0]$ and direction $[0.2 \ 0.79 \ 0.58]$, a view direction $[0.6 \ 0.42 \ 0.68]$,

- and an ambient color $[4.0 \ 1.0 \ 5.0]$, what will be p's final color, with a Phong exponent of 2?
909. What is the normal to a triangle defined by vertices $[-2.0 \ -5.0 \ 1.0]$, $[-4.0 \ -4.0 \ -2.0]$, and $[-4.0 \ 4.0 \ -4.0]$ (listed in the order of positive rotation)?
 910. Point p has a surface color of $[4.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.49 \ 0.58 \ 0.65]$. Given a light of color $[1.0 \ 4.0 \ 1.0]$ and direction $[0.65 \ 0.49 \ 0.58]$, what will be the diffuse component of p's final color?
 911. What is the normal to a triangle defined by vertices $[4.0 \ -3.0 \ 2.0]$, $[-1.0 \ -4.0 \ -2.0]$, and $[0.0 \ 2.0 \ -3.0]$ (listed in the order of positive rotation)?
 912. Point p has a surface color of $[0.5 \ 1.0 \ 0.5]$ and a surface normal of $[0.21 \ 0.59 \ 0.78]$. Given a light of color $[2.0 \ 1.0 \ 1.0]$ and direction $[0.21 \ 0.5 \ 0.84]$, and a view direction $[0.21 \ 0.59 \ 0.78]$, 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 $[4.0 \ 1.0 \ 0.0]$ and a surface normal of $[0.35 \ 0.78 \ 0.52]$. Given a light of color $[1.0 \ 0.5 \ 0.5]$ and direction $[0.58 \ 0.49 \ 0.65]$, what will be the diffuse component of p's final color?
 914. Point p has a surface color of $[0.2 \ 1.0 \ 0.0]$ and a surface normal of $[0.84 \ 0.32 \ 0.44]$. Given a light of color $[1.5 \ 1.0 \ 2.5]$ and direction $[0.8 \ 0.11 \ 0.59]$, and a view direction $[0.11 \ 0.8 \ 0.59]$, 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 $[4.0 \ -4.0 \ -4.0]$, $[-3.0 \ -4.0 \ 2.0]$, and $[2.0 \ 3.0 \ 1.0]$ (listed in the order of positive rotation)?
 916. Point p has a surface color of $[1.7 \ 1.0 \ 1.0]$ and a surface normal of $[0.8 \ 0.01 \ 0.6]$. Given a light of color $[1.0 \ 1.0 \ 0.0]$ and direction $[0.48 \ 0.78 \ 0.4]$, and a view direction $[0.59 \ 0.78 \ 0.21]$, 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 $[0.0 \ 1.0 \ 0.3]$ and a surface normal of $[0.78 \ 0.3 \ 0.55]$. Given a light of color $[0.0 \ 1.2 \ 1.0]$ and direction $[0.55 \ 0.3 \ 0.78]$, what will be the diffuse component of p's final color?
 918. Point p has a surface color of $[0.5 \ 1.0 \ 0.8]$ and a surface normal of $[0.5 \ 0.21 \ 0.84]$. Given a light of color $[0.0 \ 0.2 \ 1.0]$ and direction $[0.5 \ 0.84 \ 0.21]$, a view direction $[0.11 \ 0.8 \ 0.59]$, and an ambient color $[0.2 \ 1.0 \ 1.2]$, what will be p's final color, with a Phong exponent of 2?
 919. Given a point location of $[-2.0 \ -2.0 \ 1.0]$ and a light location of $[0.0 \ 1.0 \ -3.0]$, what is the light direction? (Remember to normalize.)
 920. What is the normal to a triangle defined by vertices $[-2.0 \ 2.0 \ 0.0]$, $[-4.0 \ 1.0 \ -1.0]$, and $[0.0 \ -4.0 \ -2.0]$ (listed in the order of positive rotation)?
 921. What is the normal to a triangle defined by vertices $[-1.0 \ -5.0 \ 0.0]$, $[-4.0 \ -5.0 \ -4.0]$, and $[3.0 \ 0.0 \ 0.0]$ (listed in the order of positive rotation)?

922. Point p has a surface color of $[2.5 \ 0.5 \ 1.0]$ and a surface normal of $[0.68 \ 0.6 \ 0.42]$. Given a light of color $[2.0 \ 4.0 \ 1.0]$ and direction $[0.8 \ 0.59 \ 0.11]$, and a view direction $[0.77 \ 0.37 \ 0.52]$, 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 $[1.0 \ 1.0 \ 0.8]$ and a surface normal of $[0.55 \ 0.2 \ 0.81]$. Given a light of color $[1.0 \ 1.7 \ 1.7]$ and direction $[0.3 \ 0.78 \ 0.55]$, and a view direction $[0.54 \ 0.58 \ 0.61]$, 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 $[-4.0 \ 3.0 \ -4.0]$, $[4.0 \ 2.0 \ -1.0]$, and $[4.0 \ -3.0 \ -4.0]$ (listed in the order of positive rotation)?
925. Given a point location of $[1.0 \ 4.0 \ -5.0]$ and a light location of $[1.0 \ -5.0 \ -2.0]$, what is the light direction? (Remember to normalize.)
926. Point p has a surface color of $[1.0 \ 0.5 \ 1.0]$ and a surface normal of $[0.78 \ 0.48 \ 0.4]$. Given a light of color $[2.5 \ 1.0 \ 1.0]$ and direction $[0.59 \ 0.78 \ 0.21]$, a view direction $[0.37 \ 0.3 \ 0.88]$, and an ambient color $[1.3 \ 1.0 \ 1.7]$, what will be p 's final color, with a Phong exponent of 2?
927. Given a point location of $[1.0 \ -5.0 \ -1.0]$ and a light location of $[-1.0 \ -1.0 \ -5.0]$, what is the light direction? (Remember to normalize.)
928. What is the normal to a triangle defined by vertices $[-4.0 \ 4.0 \ 3.0]$, $[-2.0 \ -5.0 \ 0.0]$, and $[-5.0 \ -5.0 \ -3.0]$ (listed in the order of positive rotation)?
929. Point p has a surface color of $[1.0 \ 0.5 \ 0.2]$ and a surface normal of $[0.6 \ 0.8 \ 0.0]$. Given a light of color $[1.0 \ 1.0 \ 3.0]$ and direction $[0.23 \ 0.9 \ 0.37]$, what will be the diffuse component of p 's final color?
930. Point p has a surface color of $[1.0 \ 2.0 \ 1.0]$ and a surface normal of $[0.55 \ 0.81 \ 0.2]$. Given a light of color $[0.5 \ 1.0 \ 0.0]$ and direction $[0.87 \ 0.44 \ 0.22]$, and a view direction $[0.2 \ 0.58 \ 0.79]$, 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 $[1.7 \ 0.3 \ 1.0]$ and a surface normal of $[0.22 \ 0.7 \ 0.68]$. Given a light of color $[1.0 \ 2.0 \ 1.0]$ and direction $[0.21 \ 0.59 \ 0.78]$, what will be the diffuse component of p 's final color?
932. Given a point location of $[3.0 \ -5.0 \ -3.0]$ and a light location of $[4.0 \ 0.0 \ -1.0]$, what is the light direction? (Remember to normalize.)
933. Point p has a surface color of $[1.7 \ 0.3 \ 1.0]$ and a surface normal of $[0.81 \ 0.2 \ 0.55]$. Given a light of color $[1.0 \ 1.0 \ 0.5]$ and direction $[0.88 \ 0.37 \ 0.3]$, a view direction $[0.42 \ 0.77 \ 0.48]$, and an ambient color $[1.0 \ 0.5 \ 0.8]$, what will be p 's final color, with a Phong exponent of 2?
934. Given a point location of $[1.0 \ -1.0 \ -1.0]$ and a light location of $[4.0 \ 0.0 \ -3.0]$, what is the light direction? (Remember to normalize.)
935. What is the normal to a triangle defined by vertices $[2.0 \ 3.0 \ -5.0]$, $[1.0 \ -3.0 \ 3.0]$, and $[1.0 \ 1.0 \ -3.0]$ (listed in the order of positive rotation)?

936. Point p has a surface color of $[1.0 \ 1.0 \ 4.0]$ and a surface normal of $[0.84 \ 0.21 \ 0.5]$. Given a light of color $[0.0 \ 1.0 \ 0.5]$ and direction $[0.42 \ 0.6 \ 0.68]$, what will be the diffuse component of p 's final color?
937. Given a point location of $[-3.0 \ -3.0 \ 4.0]$ and a light location of $[-1.0 \ -5.0 \ 2.0]$, what is the light direction? (Remember to normalize.)
938. Point p has a surface color of $[2.5 \ 1.0 \ 2.0]$ and a surface normal of $[0.7 \ 0.22 \ 0.68]$. Given a light of color $[1.0 \ 0.0 \ 0.8]$ and direction $[0.8 \ 0.59 \ 0.11]$, and a view direction $[0.6 \ 0.0 \ 0.8]$, what will be the specular component of p 's final color, with a Phong exponent of 2?
939. Given a point location of $[1.0 \ -4.0 \ 4.0]$ and a light location of $[-5.0 \ -1.0 \ -2.0]$, what is the light direction? (Remember to normalize.)
940. Given a point location of $[1.0 \ 3.0 \ -3.0]$ and a light location of $[-5.0 \ -2.0 \ 4.0]$, what is the light direction? (Remember to normalize.)
941. Given a point location of $[4.0 \ -1.0 \ 1.0]$ and a light location of $[-2.0 \ 4.0 \ -1.0]$, what is the light direction? (Remember to normalize.)
942. Point p has a surface color of $[2.0 \ 4.0 \ 1.0]$ and a surface normal of $[0.3 \ 0.88 \ 0.37]$. Given a light of color $[0.0 \ 1.0 \ 0.0]$ and direction $[0.48 \ 0.54 \ 0.69]$, and a view direction $[0.55 \ 0.3 \ 0.78]$, 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 $[3.0 \ 1.0 \ 0.0]$ and a surface normal of $[0.77 \ 0.48 \ 0.42]$. Given a light of color $[4.0 \ 1.0 \ 0.0]$ and direction $[0.35 \ 0.78 \ 0.52]$, a view direction $[0.48 \ 0.42 \ 0.77]$, and an ambient color $[0.2 \ 0.5 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
944. Given a point location of $[-3.0 \ -1.0 \ 3.0]$ and a light location of $[0.0 \ 0.0 \ -2.0]$, what is the light direction? (Remember to normalize.)
945. What is the normal to a triangle defined by vertices $[1.0 \ 0.0 \ 2.0]$, $[-3.0 \ 0.0 \ -3.0]$, and $[-4.0 \ -5.0 \ -1.0]$ (listed in the order of positive rotation)?
946. Point p has a surface color of $[0.5 \ 0.0 \ 1.0]$ and a surface normal of $[0.01 \ 0.6 \ 0.8]$. Given a light of color $[1.0 \ 0.0 \ 0.5]$ and direction $[0.78 \ 0.52 \ 0.35]$, and a view direction $[0.2 \ 0.79 \ 0.58]$, 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 $[1.0 \ 1.2 \ 0.5]$ and a surface normal of $[0.42 \ 0.48 \ 0.77]$. Given a light of color $[1.0 \ 4.0 \ 0.0]$ and direction $[0.58 \ 0.2 \ 0.79]$, a view direction $[0.3 \ 0.88 \ 0.37]$, and an ambient color $[1.3 \ 1.0 \ 0.7]$, what will be p 's final color, with a Phong exponent of 2?
948. Point p has a surface color of $[0.8 \ 0.2 \ 1.0]$ and a surface normal of $[0.49 \ 0.58 \ 0.65]$. Given a light of color $[1.0 \ 3.0 \ 1.0]$ and direction $[0.88 \ 0.3 \ 0.37]$, what will be the diffuse component of p 's final color?

949. Point p has a surface color of $[1.0 \ 1.0 \ 0.3]$ and a surface normal of $[0.37 \ 0.3 \ 0.88]$. Given a light of color $[3.0 \ 1.0 \ 2.0]$ and direction $[0.3 \ 0.78 \ 0.55]$, what will be the diffuse component of p 's final color?
950. Point p has a surface color of $[1.0 \ 0.0 \ 3.0]$ and a surface normal of $[0.88 \ 0.3 \ 0.37]$. Given a light of color $[1.3 \ 1.0 \ 1.0]$ and direction $[0.35 \ 0.52 \ 0.78]$, and a view direction $[0.78 \ 0.4 \ 0.48]$, 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 $[0.0 \ 4.0 \ 1.0]$ and a surface normal of $[0.3 \ 0.78 \ 0.55]$. Given a light of color $[0.8 \ 0.2 \ 1.0]$ and direction $[0.49 \ 0.58 \ 0.65]$, and a view direction $[0.8 \ 0.6 \ 0.0]$, what will be the specular component of p 's final color, with a Phong exponent of 2?
952. Given a point location of $[1.0 \ 0.0 \ -1.0]$ and a light location of $[1.0 \ 1.0 \ -4.0]$, what is the light direction? (Remember to normalize.)
953. What is the normal to a triangle defined by vertices $[-1.0 \ -1.0 \ 0.0]$, $[-3.0 \ -3.0 \ -5.0]$, and $[-4.0 \ -2.0 \ -5.0]$ (listed in the order of positive rotation)?
954. Given a point location of $[1.0 \ -2.0 \ 0.0]$ and a light location of $[0.0 \ -4.0 \ 3.0]$, what is the light direction? (Remember to normalize.)
955. Given a point location of $[-5.0 \ -1.0 \ 3.0]$ and a light location of $[0.0 \ -3.0 \ -4.0]$, what is the light direction? (Remember to normalize.)
956. What is the normal to a triangle defined by vertices $[-3.0 \ -3.0 \ 1.0]$, $[0.0 \ -4.0 \ 4.0]$, and $[-3.0 \ 3.0 \ -5.0]$ (listed in the order of positive rotation)?
957. Point p has a surface color of $[1.5 \ 1.0 \ 2.5]$ and a surface normal of $[0.8 \ 0.11 \ 0.59]$. Given a light of color $[0.2 \ 0.8 \ 1.0]$ and direction $[0.8 \ 0.0 \ 0.6]$, and a view direction $[0.44 \ 0.87 \ 0.22]$, 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 $[0.8 \ 0.5 \ 1.0]$ and a surface normal of $[0.3 \ 0.78 \ 0.55]$. Given a light of color $[0.3 \ 0.3 \ 1.0]$ and direction $[0.48 \ 0.69 \ 0.54]$, a view direction $[0.58 \ 0.54 \ 0.61]$, and an ambient color $[0.8 \ 0.5 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?
959. Point p has a surface color of $[1.5 \ 2.5 \ 1.0]$ and a surface normal of $[0.8 \ 0.0 \ 0.6]$. Given a light of color $[1.0 \ 1.2 \ 0.0]$ and direction $[0.22 \ 0.68 \ 0.7]$, a view direction $[0.68 \ 0.42 \ 0.6]$, and an ambient color $[1.0 \ 1.5 \ 0.0]$, what will be p 's final color, with a Phong exponent of 2?
960. What is the normal to a triangle defined by vertices $[1.0 \ 0.0 \ -2.0]$, $[2.0 \ 0.0 \ 1.0]$, and $[-2.0 \ -4.0 \ 3.0]$ (listed in the order of positive rotation)?
961. Point p has a surface color of $[1.2 \ 1.0 \ 0.8]$ and a surface normal of $[0.55 \ 0.2 \ 0.81]$. Given a light of color $[1.0 \ 4.0 \ 3.0]$ and direction $[0.37 \ 0.23 \ 0.9]$, a view direction $[0.37 \ 0.88 \ 0.3]$, and an ambient color $[2.0 \ 3.0 \ 1.0]$, what will be p 's final color, with a Phong exponent of 2?

962. What is the normal to a triangle defined by vertices $[-2.0 \ -5.0 \ -3.0]$, $[4.0 \ 2.0 \ 2.0]$, and $[-1.0 \ 3.0 \ -4.0]$ (listed in the order of positive rotation)?
963. Point p has a surface color of $[1.0 \ 0.0 \ 2.5]$ and a surface normal of $[0.55 \ 0.2 \ 0.81]$. Given a light of color $[1.0 \ 0.8 \ 1.0]$ and direction $[0.8 \ 0.6 \ 0.01]$, a view direction $[0.58 \ 0.49 \ 0.65]$, and an ambient color $[4.0 \ 1.0 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
964. Point p has a surface color of $[1.0 \ 3.0 \ 1.0]$ and a surface normal of $[0.42 \ 0.48 \ 0.77]$. Given a light of color $[1.3 \ 1.0 \ 1.0]$ and direction $[0.59 \ 0.8 \ 0.11]$, a view direction $[0.69 \ 0.48 \ 0.54]$, and an ambient color $[1.0 \ 4.0 \ 4.0]$, what will be p's final color, with a Phong exponent of 2?
965. What is the normal to a triangle defined by vertices $[-2.0 \ -3.0 \ -2.0]$, $[0.0 \ -2.0 \ 3.0]$, and $[-1.0 \ 3.0 \ 0.0]$ (listed in the order of positive rotation)?
966. Point p has a surface color of $[2.0 \ 1.0 \ 1.5]$ and a surface normal of $[0.6 \ 0.42 \ 0.68]$. Given a light of color $[0.5 \ 1.0 \ 1.5]$ and direction $[0.77 \ 0.37 \ 0.52]$, what will be the diffuse component of p's final color?
967. Given a point location of $[0.0 \ -4.0 \ 0.0]$ and a light location of $[4.0 \ -5.0 \ -2.0]$, what is the light direction? (Remember to normalize.)
968. Point p has a surface color of $[0.2 \ 0.2 \ 1.0]$ and a surface normal of $[0.8 \ 0.59 \ 0.11]$. Given a light of color $[5.0 \ 4.0 \ 1.0]$ and direction $[0.21 \ 0.59 \ 0.78]$, and a view direction $[0.3 \ 0.88 \ 0.37]$, what will be the specular component of p's final color, with a Phong exponent of 2?
969. Given a point location of $[2.0 \ -1.0 \ 3.0]$ and a light location of $[4.0 \ 2.0 \ 1.0]$, what is the light direction? (Remember to normalize.)
970. Point p has a surface color of $[1.0 \ 1.0 \ 0.5]$ and a surface normal of $[0.42 \ 0.77 \ 0.48]$. Given a light of color $[1.0 \ 1.7 \ 0.7]$ and direction $[0.55 \ 0.3 \ 0.78]$, a view direction $[0.87 \ 0.22 \ 0.44]$, and an ambient color $[0.7 \ 1.0 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
971. Point p has a surface color of $[1.0 \ 1.0 \ 0.7]$ and a surface normal of $[0.55 \ 0.2 \ 0.81]$. Given a light of color $[0.5 \ 1.0 \ 0.0]$ and direction $[0.23 \ 0.37 \ 0.9]$, and a view direction $[0.11 \ 0.59 \ 0.8]$, 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 $[1.0 \ 1.2 \ 1.0]$ and a surface normal of $[0.8 \ 0.6 \ 0.01]$. Given a light of color $[2.5 \ 1.0 \ 1.5]$ and direction $[0.59 \ 0.78 \ 0.21]$, what will be the diffuse component of p's final color?
973. Point p has a surface color of $[0.5 \ 1.0 \ 2.5]$ and a surface normal of $[0.81 \ 0.55 \ 0.2]$. Given a light of color $[0.3 \ 1.0 \ 0.7]$ and direction $[0.44 \ 0.87 \ 0.22]$, a view direction $[0.21 \ 0.59 \ 0.78]$, and an ambient color $[2.5 \ 1.0 \ 0.5]$, what will be p's final color, with a Phong exponent of 2?
974. Point p has a surface color of $[1.0 \ 5.0 \ 4.0]$ and a surface normal of $[0.54 \ 0.48 \ 0.69]$. Given a light of color $[1.5 \ 0.0 \ 1.0]$ and direction $[0.44 \ 0.84 \ 0.32]$, and a view direction

- $[0.69 \ 0.48 \ 0.54]$, 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 $[-5.0 \ -4.0 \ 4.0]$, $[-3.0 \ 0.0 \ 1.0]$, and $[1.0 \ -2.0 \ -4.0]$ (listed in the order of positive rotation)?
976. Point p has a surface color of $[1.0 \ 1.2 \ 1.2]$ and a surface normal of $[0.84 \ 0.21 \ 0.5]$. Given a light of color $[0.0 \ 1.0 \ 0.0]$ and direction $[0.78 \ 0.59 \ 0.21]$, what will be the diffuse component of p's final color?
977. Given a point location of $[3.0 \ 0.0 \ -4.0]$ and a light location of $[4.0 \ -3.0 \ -3.0]$, what is the light direction? (Remember to normalize.)
978. Point p has a surface color of $[5.0 \ 0.0 \ 1.0]$ and a surface normal of $[0.22 \ 0.68 \ 0.7]$. Given a light of color $[1.2 \ 1.0 \ 1.0]$ and direction $[0.48 \ 0.4 \ 0.78]$, a view direction $[0.88 \ 0.3 \ 0.37]$, and an ambient color $[1.0 \ 1.0 \ 1.7]$, what will be p's final color, with a Phong exponent of 2?
979. Point p has a surface color of $[3.0 \ 1.0 \ 0.0]$ and a surface normal of $[0.78 \ 0.35 \ 0.52]$. Given a light of color $[0.5 \ 1.0 \ 1.0]$ and direction $[0.44 \ 0.22 \ 0.87]$, a view direction $[0.37 \ 0.9 \ 0.23]$, and an ambient color $[1.2 \ 0.2 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
980. Given a point location of $[-4.0 \ -2.0 \ -4.0]$ and a light location of $[0.0 \ -1.0 \ -4.0]$, what is the light direction? (Remember to normalize.)
981. Point p has a surface color of $[1.0 \ 2.5 \ 2.0]$ and a surface normal of $[0.7 \ 0.68 \ 0.22]$. Given a light of color $[1.0 \ 0.2 \ 0.2]$ and direction $[0.84 \ 0.44 \ 0.32]$, a view direction $[0.78 \ 0.4 \ 0.48]$, and an ambient color $[1.2 \ 1.0 \ 0.8]$, what will be p's final color, with a Phong exponent of 2?
982. Point p has a surface color of $[1.0 \ 3.0 \ 3.0]$ and a surface normal of $[0.54 \ 0.48 \ 0.69]$. Given a light of color $[0.8 \ 1.0 \ 1.0]$ and direction $[0.78 \ 0.59 \ 0.21]$, a view direction $[0.8 \ 0.0 \ 0.6]$, and an ambient color $[1.0 \ 4.0 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
983. Point p has a surface color of $[0.3 \ 0.0 \ 1.0]$ and a surface normal of $[0.88 \ 0.37 \ 0.3]$. Given a light of color $[1.0 \ 1.0 \ 0.0]$ and direction $[0.37 \ 0.23 \ 0.9]$, what will be the diffuse component of p's final color?
984. Point p has a surface color of $[0.0 \ 0.3 \ 1.0]$ and a surface normal of $[0.44 \ 0.84 \ 0.32]$. Given a light of color $[0.5 \ 1.0 \ 0.5]$ and direction $[0.21 \ 0.84 \ 0.5]$, and a view direction $[0.48 \ 0.54 \ 0.69]$, 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 $[1.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.3 \ 0.78 \ 0.55]$. Given a light of color $[0.2 \ 1.2 \ 1.0]$ and direction $[0.2 \ 0.58 \ 0.79]$, and a view direction $[0.78 \ 0.21 \ 0.59]$, 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 $[-2.0 \ -5.0 \ -1.0]$, $[-3.0 \ 1.0 \ 0.0]$, and $[0.0 \ 0.0 \ 0.0]$ (listed in the order of positive rotation)?

987. Point p has a surface color of $[0.8 \ 1.0 \ 0.5]$ and a surface normal of $[0.8 \ 0.6 \ 0.0]$. Given a light of color $[1.0 \ 1.5 \ 0.0]$ and direction $[0.37 \ 0.88 \ 0.3]$, a view direction $[0.9 \ 0.37 \ 0.23]$, and an ambient color $[1.0 \ 1.0 \ 0.8]$, what will be p's final color, with a Phong exponent of 2?
988. Point p has a surface color of $[1.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.6 \ 0.68 \ 0.42]$. Given a light of color $[0.7 \ 1.7 \ 1.0]$ and direction $[0.6 \ 0.42 \ 0.68]$, a view direction $[0.58 \ 0.61 \ 0.54]$, and an ambient color $[1.0 \ 1.7 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
989. Point p has a surface color of $[2.0 \ 4.0 \ 1.0]$ and a surface normal of $[0.77 \ 0.42 \ 0.48]$. Given a light of color $[1.0 \ 1.0 \ 1.2]$ and direction $[0.3 \ 0.55 \ 0.78]$, a view direction $[0.84 \ 0.32 \ 0.44]$, and an ambient color $[0.2 \ 1.2 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
990. What is the normal to a triangle defined by vertices $[-3.0 \ 2.0 \ -3.0]$, $[-4.0 \ -4.0 \ 3.0]$, and $[2.0 \ 2.0 \ 1.0]$ (listed in the order of positive rotation)?
991. Point p has a surface color of $[0.2 \ 0.2 \ 1.0]$ and a surface normal of $[0.78 \ 0.35 \ 0.52]$. Given a light of color $[1.0 \ 1.0 \ 1.0]$ and direction $[0.48 \ 0.69 \ 0.54]$, what will be the diffuse component of p's final color?
992. Given a point location of $[2.0 \ 2.0 \ 1.0]$ and a light location of $[-3.0 \ 2.0 \ -4.0]$, what is the light direction? (Remember to normalize.)
993. Given a point location of $[0.0 \ 2.0 \ -5.0]$ and a light location of $[1.0 \ -4.0 \ 3.0]$, what is the light direction? (Remember to normalize.)
994. What is the normal to a triangle defined by vertices $[-4.0 \ 2.0 \ -4.0]$, $[-1.0 \ 2.0 \ -2.0]$, and $[1.0 \ -5.0 \ 3.0]$ (listed in the order of positive rotation)?
995. Given a point location of $[-5.0 \ 4.0 \ 4.0]$ and a light location of $[-4.0 \ -5.0 \ 2.0]$, what is the light direction? (Remember to normalize.)
996. Point p has a surface color of $[4.0 \ 1.0 \ 5.0]$ and a surface normal of $[0.6 \ 0.42 \ 0.68]$. Given a light of color $[1.0 \ 1.0 \ 0.3]$ and direction $[0.8 \ 0.59 \ 0.11]$, a view direction $[0.3 \ 0.37 \ 0.88]$, and an ambient color $[1.0 \ 1.0 \ 1.0]$, what will be p's final color, with a Phong exponent of 2?
997. Point p has a surface color of $[2.0 \ 1.0 \ 1.0]$ and a surface normal of $[0.37 \ 0.23 \ 0.9]$. Given a light of color $[1.7 \ 1.0 \ 1.0]$ and direction $[0.8 \ 0.59 \ 0.11]$, a view direction $[0.8 \ 0.01 \ 0.6]$, and an ambient color $[1.0 \ 1.0 \ 0.2]$, what will be p's final color, with a Phong exponent of 2?
998. Point p has a surface color of $[1.0 \ 1.5 \ 1.0]$ and a surface normal of $[0.01 \ 0.6 \ 0.8]$. Given a light of color $[1.0 \ 2.5 \ 0.0]$ and direction $[0.8 \ 0.6 \ 0.0]$, what will be the diffuse component of p's final color?
999. Point p has a surface color of $[1.0 \ 2.5 \ 2.5]$ and a surface normal of $[0.9 \ 0.23 \ 0.37]$. Given a light of color $[0.0 \ 1.3 \ 1.0]$ and direction $[0.37 \ 0.3 \ 0.88]$, and a view direction $[0.59 \ 0.8 \ 0.11]$, 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 $[5.0 \ 1.0 \ 4.0]$ and a surface normal of $[0.48 \ 0.77 \ 0.42]$. Given a light of color $[0.0 \ 1.0 \ 3.0]$ and direction $[0.42 \ 0.48 \ 0.77]$, a view direction $[0.8 \ 0.11 \ 0.59]$, and an ambient color $[1.0 \ 1.3 \ 1.7]$, what will be p 's final color, with a Phong exponent of 2?