

Tecnológico de Estudios Superiores de Huixquilucan - Ingeniería Mecatrónica
Cálculo Diferencial - Actividad 3 - Tarea

Resolver los siguientes ejercicios.

Nombre del (la) estudiante: _____

Hallar la derivada de las siguientes funciones:

- | | | |
|---|---|--|
| 1. $y = x^3$ | 19. $y = \frac{\sqrt{x}}{2} - \frac{2}{\sqrt{x}}$ | 36. $y = \sqrt{\frac{1-cx}{1+cx}}$ |
| 2. $y = ax^4 - bx^2$ | 20. $s = \frac{a+bt+ct^2}{\sqrt{t}}$ | 37. $y = \sqrt{\frac{a^2+x^2}{a^2-x^2}}$ |
| 3. $y = x^{\frac{4}{3}} + 5$ | 21. $y = \sqrt{ax} + \frac{a}{\sqrt{ax}}$ | 38. $s = \sqrt[3]{\frac{2+3t}{2-3t}}$ |
| 4. $y = \frac{3x^3}{\sqrt[5]{x^2}} - \frac{7x}{\sqrt[3]{x^4}} + 8\sqrt[7]{x^3}$ | 22. $r = \sqrt{1-2\theta}$ | 39. $y = \sqrt{2px}$ |
| 5. $y = (x^2 - 3)^5$ | 23. $s = (2 - 3t^2)^3$ | 40. $y = \frac{b}{a}\sqrt{a^2 - x^2}$ |
| 6. $y = \sqrt{a^2 + x^2}$ | 24. $y = \sqrt[3]{4-9x}$ | 41. $y = \left(a^{\frac{2}{3}} - x^{\frac{2}{3}}\right)^{\frac{3}{2}}$ |
| 7. $y = (3x^2 + 2)\sqrt{1+5x^2}$ | 25. $y = \frac{1}{\sqrt{a^2-x^2}}$ | 42. $y = \sqrt{2x} + \sqrt[3]{3x}$ |
| 8. $y = \frac{a^2+x^2}{\sqrt{a^2-x^2}}$ | 26. $r = (2 - 3t^2)^3$ | 43. $y = \frac{2-x}{1+2x^2}$ |
| 9. $y = 3x^4 - 2x^2 + 8$ | 27. $y = \left(a - \frac{b}{x}\right)^2$ | 44. $y = \frac{x}{\sqrt{a-bx}}$ |
| 10. $y = 4 = 3x - 2x^3$ | 28. $y = \left(a + \frac{b}{x^2}\right)^3$ | 45. $s = \frac{\sqrt{a+bt}}{t}$ |
| 11. $s = at^5 - 5bt^3$ | 29. $y = x\sqrt{a+bx}$ | 46. $r = \frac{\sqrt[3]{a+b\theta}}{\theta}$ |
| 12. $w = \frac{z^2}{2} - \frac{z^7}{7}$ | 30. $s = t\sqrt{a^2+t^2}$ | 47. $y = x^2\sqrt{5-2x}$ |
| 13. $w = \sqrt{v}$ | 31. $y = \frac{a-x}{a+x}$ | 48. $y = x\sqrt[3]{2+3x}$ |
| 14. $y = \frac{2}{x} - \frac{3}{x^2}$ | 32. $y = \frac{a^2+x^2}{a^2-x^2}$ | 49. $s = \sqrt{2t - \frac{1}{t^2}}$ |
| 15. $s = 2t^{\frac{4}{3}} - 3t^{\frac{2}{3}}$ | 33. $y = \frac{\sqrt{a^2+x^2}}{x}$ | 50. $y = (x+2)^2\sqrt{x^2+2}$ |
| 16. $y = 2x^{\frac{3}{4}} + 4x^{-\frac{1}{4}}$ | 34. $y = \frac{x}{\sqrt{a^2-x^2}}$ | 51. $y = \frac{\sqrt{1+2x}}{\sqrt[3]{1+3x}}$ |
| 17. $y = x^{\frac{2}{3}} - a^{\frac{2}{3}}$ | 35. $r = \theta^2\sqrt{3-4\theta}$ | |
| 18. $y = \frac{a+bx+cx^2}{x}$ | | |