

$$1. 0 \quad 3. 2 \quad 5. 2t - 8 \quad 7. \frac{9}{2t^4}$$

$$9. 18(2 - x^2)(5x^2 - 2) \quad 11. \frac{4}{(x - 1)^3}$$

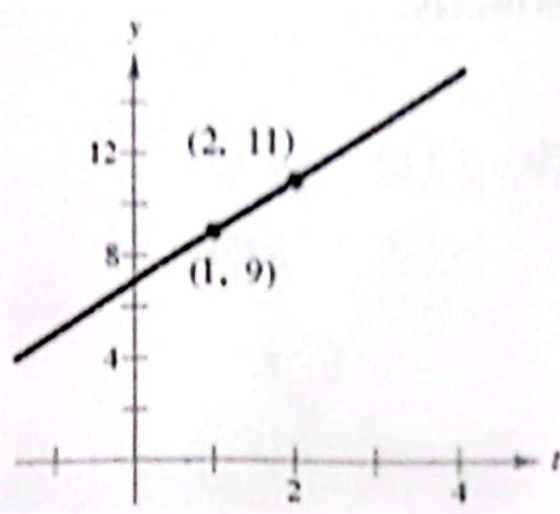
$$13. 12x^2 + 24x + 16 \quad 15. 60x^2 - 72x$$

$$17. 120x + 360 \quad 19. -\frac{9}{2x^5} \quad 21. 260 \quad 23. -\frac{1}{648}$$

$$25. -126 \quad 27. 4x \quad 29. \frac{2}{x^2} \quad 31. 2$$

$$33. f''(x) = 6(x - 3) = 0 \text{ para } x = 3.$$

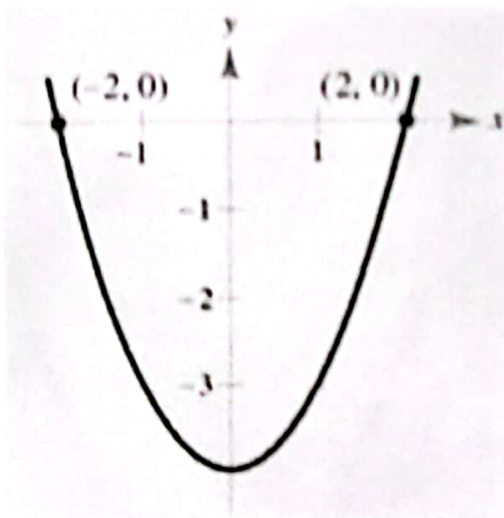
3.



Taxa média: 2

Taxas instantâneas: $f'(1) = 2, f'(2) = 2$

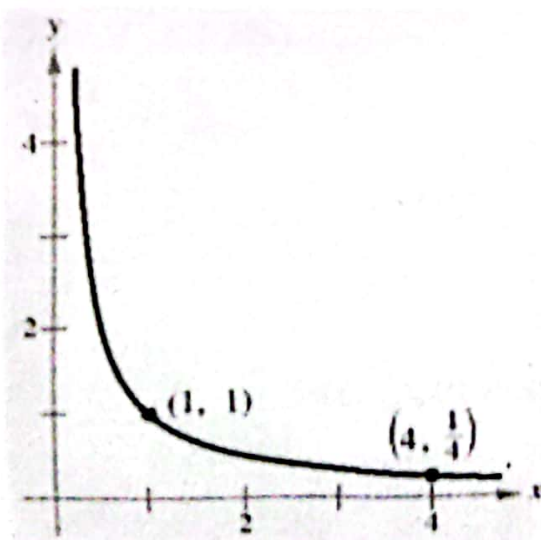
5.



Taxa média: 0

Taxas instantâneas: $h'(-2) = -4, h'(2) = 4$

7.



Taxa média: $-1/4$

Taxas instantâneas: $f'(1) = -1, f'(4) = -1/16$

15. (a) $-24,5 \text{ m/s}$

(b) $s'(2) = -19,6 \text{ m/s}; s'(3) = -29,4 \text{ m/s}$

(c) $\frac{\sqrt{169}}{4,9} \approx 5,87 \text{ s}$

(d) $-9,8 \frac{\sqrt{169}}{4,9} \approx -57,5 \text{ m/s}$

17. (a) $37,5 \text{ m/s}$ (b) $33,\bar{3} \text{ m/s}$