

Answers

$$1a) \frac{4d^6}{9a^6b^2c^8} \quad b) \frac{-x^{15}}{9} \quad 2a) (3x^2 - 5y)(3x^2 + 5y) \quad b) 3b^2(a+1)(2a+1) \quad c) (5x-2y)(a-7b)$$

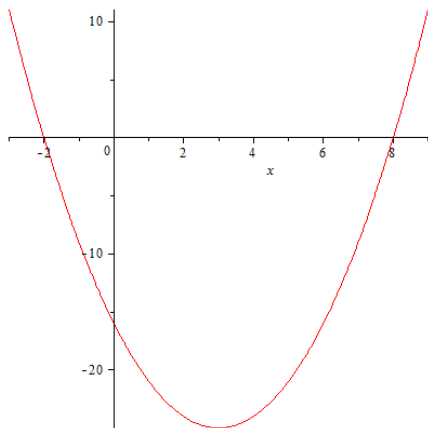
$$3a) \frac{3x}{x+3} \quad b) \frac{x}{4} + \frac{1}{2} \quad 4) \frac{9(3-\sqrt{x})}{9-x} \quad 5) 2x^2 + 3x - 4 - \frac{5}{x-3} \quad 6a) 5\sqrt{5} \quad b) \left(-2, \frac{1}{2}\right)$$

$$c) y = \frac{4}{3}x + \frac{37}{3} \quad d) y = 3 \quad e) y = -\frac{1}{2}x - \frac{1}{2} \quad 7a) x = -\frac{10}{3} \quad b) x = -1, 0, \frac{2}{3} \quad c) x = \frac{-1 \pm \sqrt{2}}{3}$$

$$d) x > \frac{9}{4} \quad e) x = -2 \quad f) x = -\frac{2}{3} \quad 8a) \frac{1}{\sqrt{3+h} + \sqrt{3}} \quad b) \frac{3(\sqrt{x}+1)^2 - 4}{(\sqrt{x}+1)^2 - 2} \quad c) [1, \infty)$$

$$d) \{x \mid x \neq \pm\sqrt{2}\} \quad e) f^{-1}(x) = x^2 - 2x + 1 \quad 9a) \text{vertex } (3, -25), \text{axis of symmetry } x = 3, \\ y\text{-intercept } (0, -16), x\text{-intercepts } (-2, 0), (8, 0) \quad b) [-25, \infty)$$

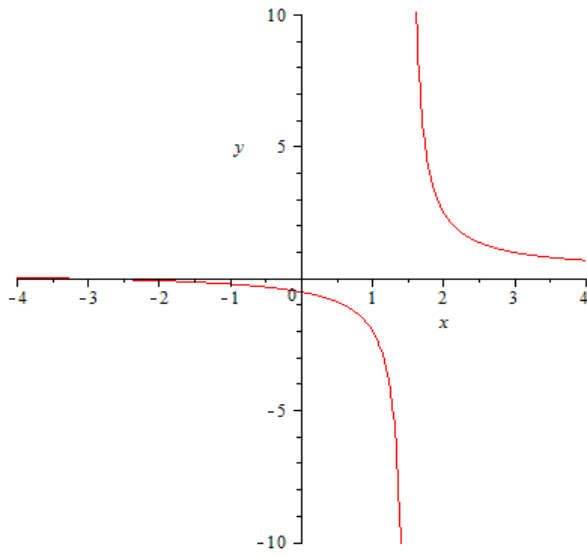
c)



$$10a) V.A. x = \frac{3}{2}, H.A. y = \frac{1}{4}, y\text{-intercept } \left(0, -\frac{1}{2}\right), x\text{-intercept } (-3, 0)$$

b)

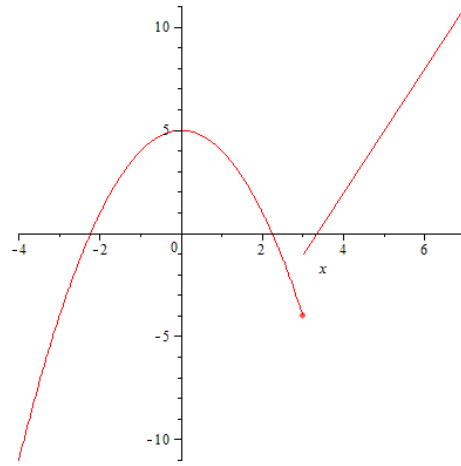
$$c) \left\{ x \mid x \neq \frac{3}{2} \right\}$$



11a)11

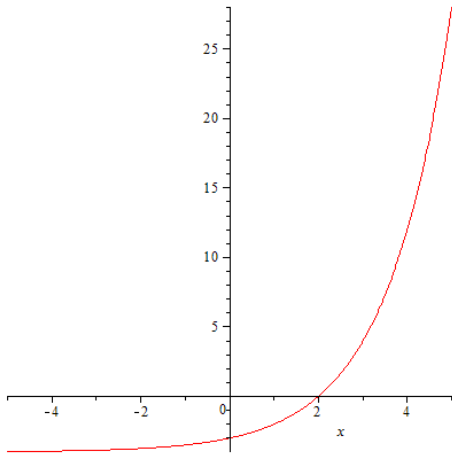
b)

c) domain \mathbb{R} , range \mathbb{R}



12a)

b) domain \mathfrak{R} , range $(-4, \infty)$



c) x -intercept $(\log_2 4, 0)$, y -intercept $(0, -3)$, asymptote $y = -4$ 13) 6

14) $-\frac{1}{2} \ln(x-2) + 2 \ln(x+2)$ 15) $\frac{49}{2}$ 16a) $x = -1,3$ b) $x = 5 + \ln 2$ c) $x = 2$

17) \$37 222 18) $\sin \theta = \frac{\sqrt{5}}{3}$, $\cot \theta = \frac{2}{\sqrt{5}}$ 19) $\theta = 30^\circ$ 20a) $\frac{2\pi}{5}$ b) -105° c) 140°

21a) $1 - \sin^2 \theta = \cos^2 \theta$ b) $\frac{\frac{\sin y + \cos y}{\cos y} + \frac{\cos y}{\sin y}}{\frac{1}{\sin y}} = \sec y$

$\cos^2 \theta = \cos^2 \theta$ $\frac{\sin^2 y}{\cos y} + \cos y = \sec y$

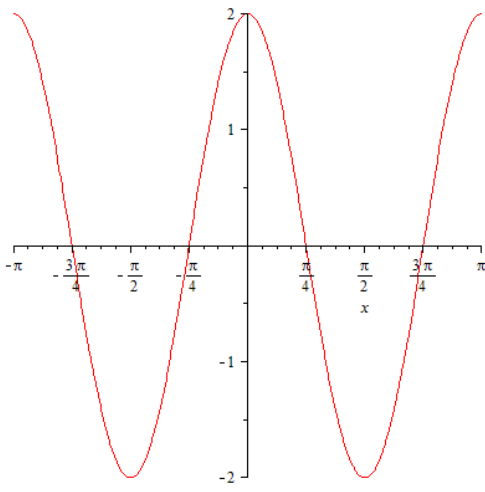
$\frac{\sin^2 y + \cos^2 y}{\cos y} = \sec y$

$\frac{1}{\cos y} = \sec y$

$\sec y = \sec y$

22) $x = 7.17$ 23) $x = 60^\circ$ 24) $\frac{2}{\sqrt{3}}$

25)



26) 471.03° 27) 154.93° and 205.07°