

1. -1, 3, DNE

2. DNE

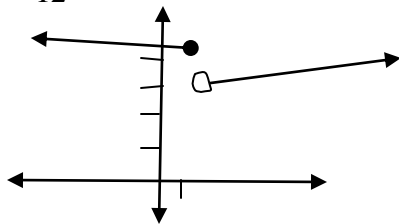
3. -8

4.  $-\infty$

5. -4, 4, DNE

6.  $-\frac{7}{12}$

7.



8.  $\infty$

9. Discontinuous at  $x = -3$  and  $x = \frac{1}{2}$

10. No points of discontinuity

11. No points of discontinuity

12. VA at  $x = 2$  and  $x = -2$ ; HA at  $y = 1$

13.  $\frac{1}{3}$

14.  $f'(-4) = -39$

15.  $f'(x) = 9x^2 + \frac{8}{x^3}$

16.  $f'(x) = \frac{63}{5}x^{\frac{2}{5}} - 10x$

17.  $f'(x) = -\frac{16}{x^5} - \frac{10}{3x^{\frac{1}{3}}}$

18.  $y' = \frac{x^2}{10}$

19.  $\Delta y = f(2.3) - f(2) = 15.183$ ;  $dy = 14.4$

20. a)  $\bar{C}(x) = 0.0002x^2 - 0.048x + 200 + \frac{50,000}{x}$

b)  $\bar{C}'(x) = 0.0004x - 0.048 - \frac{50,000}{x^2}$

c)  $P(x) = 0.0002x^3 - 0.048x^2 - 200x + 50,000$

d)  $\bar{P}'(x) = 0.0004x - 0.048 - \frac{50,000}{x^2}$

e)  $C(51) - C(50) = \$196.68$

f)  $\$196.70$