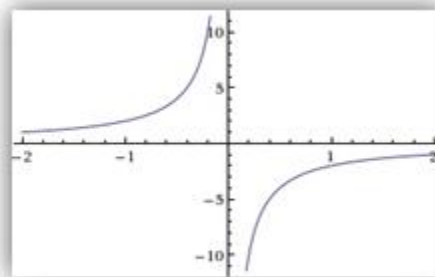
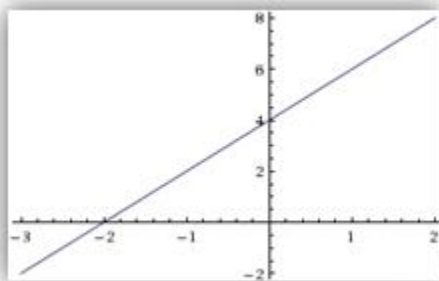


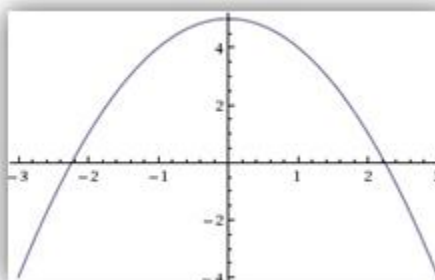
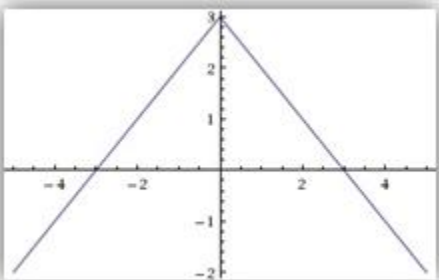
## Answers to College Algebra Placement Review

1. a)  $-32$       b)  $4$       c)  $11$       d)  $\frac{35}{24}$       e)  $\frac{11}{10}$       f)  $\frac{1}{4}$
2. a)  $16$       b)  $81a^{20}$       c)  $\frac{1}{x^2}$       d)  $a^2b - 2ab^2$       e)  $x^2y + 2xy$       f)  $20m$       g)  $2x^3 + 5x^2 - 4$
3. a)  $x = \frac{5}{3}$       b)  $z = 3$       c)  $M = \frac{3}{5}$       d)  $p = \frac{1}{9}$       e)  $h = \frac{23}{12}$       f)  $D = -3$
4. a)  $(-\infty, 10)$       b)  $[-4, \infty)$       c)  $(-\infty, 2]$       d)  $(\frac{23}{16}, \infty)$       e)  $(-3, 7)$       f)  $[-5, \frac{17}{3})$   
 g)  $[\frac{32}{15}, \frac{13}{5})$       h)  $(-3, 5]$       i)  $(-\infty, \infty)$       j)  $(-\infty, \frac{1}{7}) \cup (6, \infty)$       k)  $\emptyset$
5. a)  $\{-9, 9\}$       b)  $\emptyset$       c)  $\{\frac{2}{11}, 1\}$       d)  $\{-\frac{9}{2}, \frac{27}{2}\}$       e)  $\{\frac{4}{5}, 12\}$       f)  $\{-\frac{2}{3}, 2\}$       g)  $\{-\frac{38}{7}, -2\}$       h)  $\emptyset$
6. a)  $[-21, 19]$       b)  $[-4, \frac{5}{2}]$       c)  $(-\infty, -9] \cup [3, \infty)$       d)  $(-\frac{2}{11}, 4)$   
 e)  $(-\infty, \infty)$       f)  $(-\infty, -\frac{53}{6}) \cup (-\frac{17}{6}, \infty)$       g)  $\emptyset$       h)  $(-\infty, \infty)$
7. a)  $m = \frac{6T}{v}$       b)  $L = \frac{9}{a+h}$       c)  $h = \frac{A-3\pi r^2}{6\pi r}$       d)  $x = \frac{3B}{2-B}$       e)  $T = \frac{3RS}{2S-5R}$       f)  $y = x^2 + 5x + 1$
8. a) Domain:  $\{-3, 0, 2, 4, 6\}$ , Range:  $\{-1, 1, 6\}$ , function      b) Domain:  $\{0, 1, 4, 9\}$ , Range:  $\{-2, -1, 1, 2, 7\}$ , not a function
9. a)  $y = 2x + 4$  over interval  $[-3, 2]$       b)  $y = -\frac{2}{x}$  over interval  $[-2, 2]$

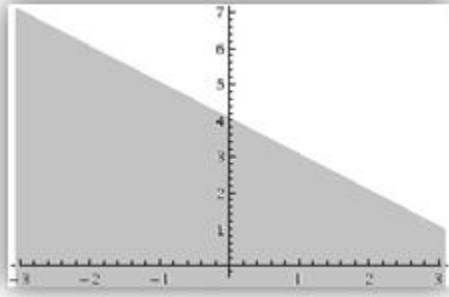


c)  $y = 3 - |x|$  over interval  $[-5, 5]$

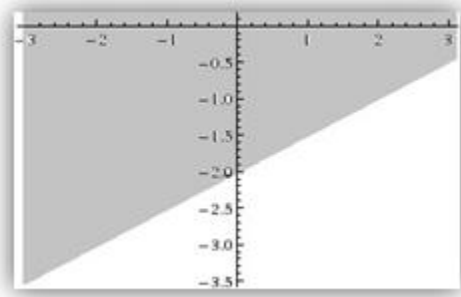
d)  $y = 5 - x^2$  over interval  $[-3, 3]$



e)  $y \leq -x + 4$  over interval  $[-3, 3]$



f)  $y \geq \frac{1}{2}x - 2$  over interval  $[-3, 3]$



10. a)  $y = x + 2$       b)  $y = 5$       c)  $y = \frac{1}{3}x - \frac{7}{3}$       d) undefined slope,  $x = -3$
11. a)  $y = 2x - 5$       b)  $y = 3x$
12. a)  $y = 3x + 1$       b)  $y = \frac{1}{2}x + 3$
13. a)  $(-2, -7)$       b)  $(\frac{1}{2}, -2)$       c) no solution      d) infinitely many solutions
- e)  $(-\frac{4}{5}, -3)$       f)  $(57, -8)$       g) no solution      h)  $(\frac{32}{15}, \frac{12}{5})$
14. a)  $3x^5y^2(2y^6 - 3x^2)$       b)  $2(x - 5)(x + 5)$       c)  $(t - 7)(t - 1)$       d) prime
- e)  $(h + 5)(h - 3)$       f)  $(3z + 1)(z - 4)$       g)  $(8x^5 + 13y^2)(8x^5 - 13y^2)$       h)  $(a - 2)(a + 1)$
- i)  $(2x + 5)(4x^2 - 10x + 25)$       j)  $2(m - 1)^2$       k)  $(5x + 3)(2x - 7)$       l)  $(3x - 2)(x + 1)$
- m)  $(3a^2 - 1)(a - 2)$       n)  $(x^2 + 5)(x + 2)(x - 2)$
15. a) 2      b)  $4 + \frac{10}{x-3}$       c)  $x^2 - 2x + 5 + \frac{18}{x-4}$       d)  $2x^2 + 4x + 8 - \frac{3}{x-2}$       e)  $x - 3 - \frac{11x^2 - 10x + 5}{x^3 - x^2 + 2x - 1}$
16. a)  $x = 2, x = 1$       b)  $x = 19$       c)  $x = -5, x = 2$
- d)  $x = -3, x = 2$       e)  $x = 0, x = \frac{2}{3}, x = \frac{7}{2}$       f)  $x = -1, x = \frac{5}{3}$
17. a)  $\frac{x-1}{x+5}$       b)  $\frac{x+2}{2x-2}$       c)  $\frac{3x-2}{x^2-4}$       d)  $\frac{1}{x}$       e)  $7 - t$
- f)  $\frac{1}{x(x+3)}$       g)  $x + 6$       h)  $\frac{x^2+7y^2}{xy+4}$       i)  $\frac{4x-25}{x(x-5)}$       j)  $\frac{2(3a+1)}{9a+5}$
18. a)  $x = \frac{5}{2}$       b)  $Q = 1$       c)  $y = 8$       d)  $p = 6$       e) no solution      f)  $t = 0$
19. a)  $x = -\frac{1}{3}, 1$       b)  $m = \frac{1 \pm \sqrt{2}}{3}$       c)  $p = -\frac{1}{5}, 1$       d)  $Q = -\frac{3}{2}, \frac{1}{2}$
- e)  $x = -1, 2$       f)  $A = -5, 7$       g)  $x = -1, -5$       h)  $w = -\frac{1}{2}, \frac{5}{2}$
- i)  $x = 2 \pm \sqrt{11}$       j)  $x = -4 \pm \sqrt{3}$       k)  $y = -\frac{5}{2}, \frac{3}{2}$       l)  $h = \frac{-3 \pm \sqrt{21}}{2}$