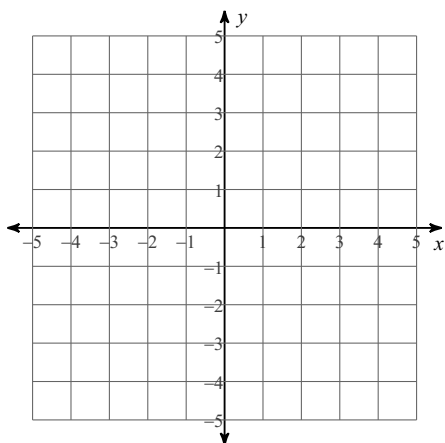


DE College Algebra Summer Review (no calculators)

Solve each system by graphing.

1) $y = \frac{1}{4}x + 4$

$y = -\frac{3}{2}x - 3$



Simplify each expression.

2) $(2m^2 - 8m^4 - 6) - (8m^2 - 4m^4 + 6)$

3) $(5m^3 + 8 + 2m^2) + (4m^3 + 6m^2 - 2)$

Find each product.

4) $(-7k - 4)(2k^2 + k + 1)$

Evaluate each function.

5) $p(x) = 2x^2 - x$; Find $p(-7)$

6) $k(n) = 3n^2 - 5$; Find $k(-6)$

Evaluate each using the values given.

7) $x - |z| + y - x$; use $x = -10$, $y = 2$, and $z = -10$

8) $x - (x + zy - z)$; use $x = 1$, $y = 7$, and $z = -1$

Simplify each expression.

9) $1 + 8(5n + 6)$

10) $8(x + 7) - 7$

11) $8v + 2(3 - 3v)$

12) $2 + 8(1 - 4r)$

13) $\left(n + \frac{11}{8}\right) \cdot \frac{40}{7}$

14) $-\frac{11}{7}\left(-\frac{6}{5}n + \frac{11}{7}\right)$

Solve each equation.

15) $5 + 8(6x + 3) = 317$

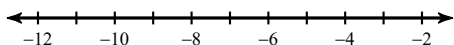
16) $-6(6n - 6) = -108$

17) $\frac{13}{5} \left(\frac{15}{4}v + \frac{7}{2} \right) = \frac{871}{10}$

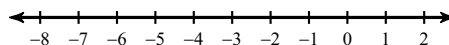
18) $-6 \left(2b - \frac{11}{6} \right) = 83$

Solve each inequality and graph its solution.

19) $7n - 8(3n - 4) < 151$



20) $204 \geq -6(1 + 7k)$



Solve each equation.

21) $|n + 2| = 2$

22) $|8r| = 48$

Solve each equation. Remember to check for extraneous solutions.

23) $2 = \sqrt{m - 5}$

24) $0 = \sqrt{\frac{n}{4}}$

$$25) \frac{2}{m} = \frac{3m-9}{5m} + \frac{1}{5m}$$

$$26) \frac{1}{4x^2} = \frac{x-2}{x^2} - \frac{3}{x^2}$$

Solve each equation by factoring.

$$27) p^2 + 6p = -8$$

$$28) x^2 - 8 = 7x$$

$$29) 2x^2 - 26x = -84$$

$$30) x^2 - 10x = -16$$

Solve each equation by taking square roots.

$$31) b^2 + 3 = 85$$

$$32) x^2 + 1 = 5$$

Solve each equation with the quadratic formula.

$$33) r^2 = 12r - 11$$

$$34) 6m^2 = -5m - 10$$

Simplify. Your answer should contain only positive exponents.

35) $3a^2b^4 \cdot ba^4$

36) $uv^4 \cdot v^2$

37) $3v^4 \cdot u^4$

38) $4x^4 \cdot 4x^4y^3$

Factor each completely. (special cases)

39) $4p^2 - 9$

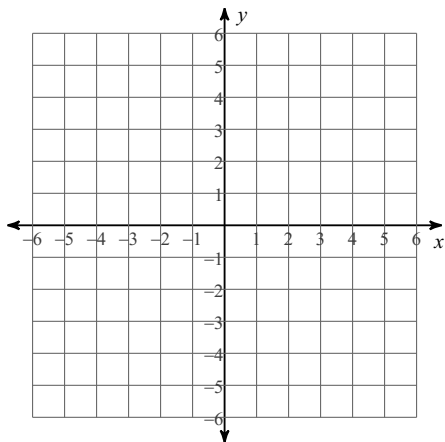
40) $16k^2 - 9$

41) $125 + 27u^3$

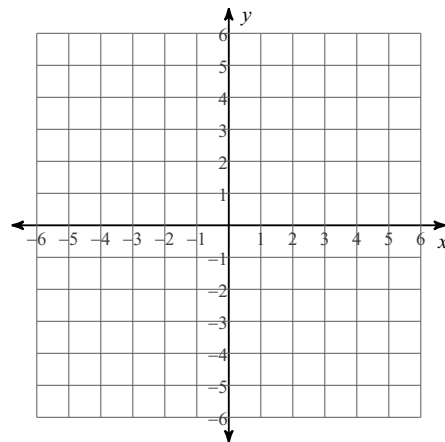
42) $27 + 8x^3$

Sketch the graph of each line.

43) $2x + 3y = 3$

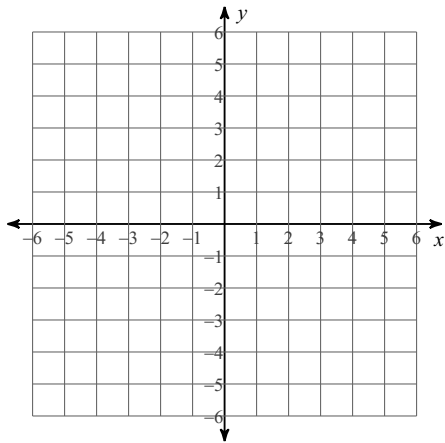


44) $2x - 5y = -15$

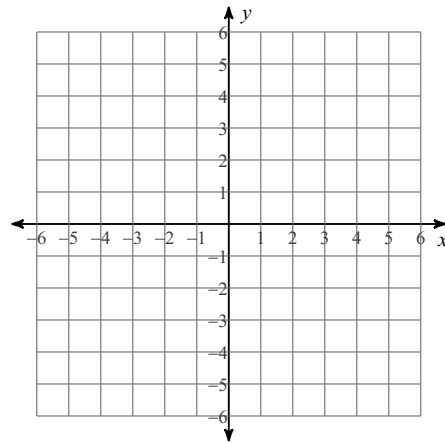


Sketch the graph of each linear inequality.

45) $y < \frac{4}{5}x - 4$

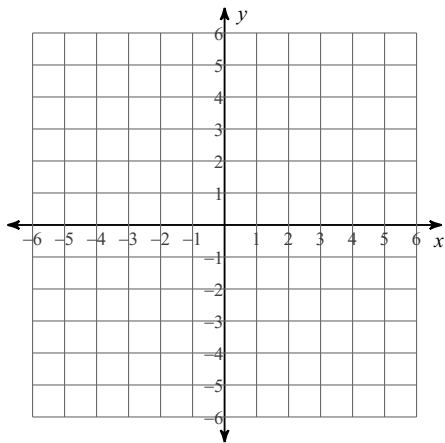


46) $y \geq -\frac{4}{5}x + 1$

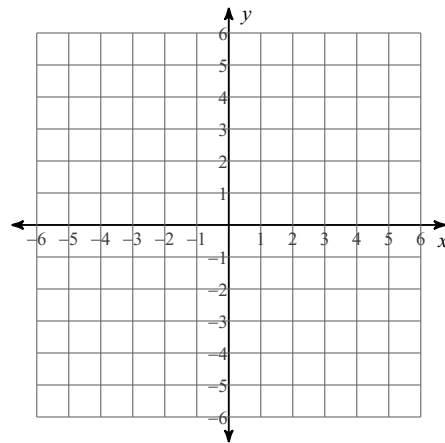


Graph each equation.

47) $y = |x| - 2$

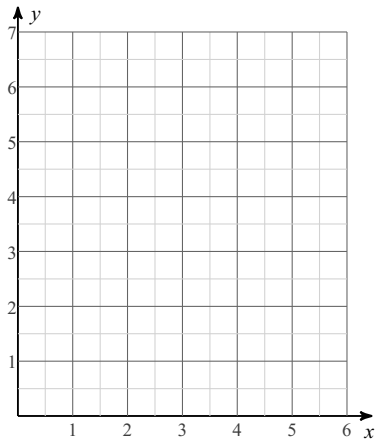


48) $y = |x + 1|$

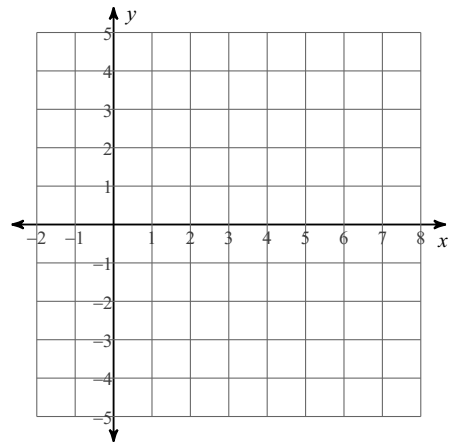


Sketch the graph of each function.

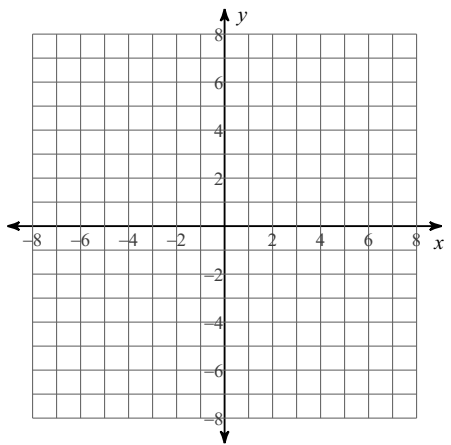
49) $y = x^2 - 6x + 11$



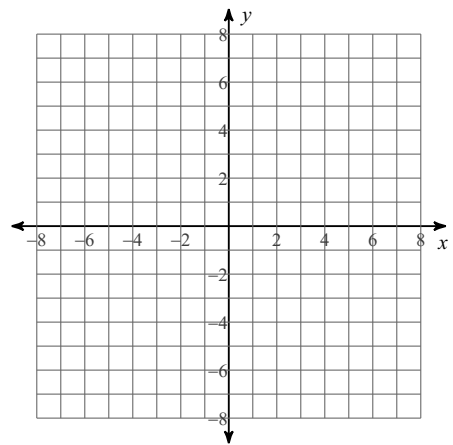
50) $y = -2(x - 2)^2 + 4$



51) $y = -1 + \sqrt{x}$

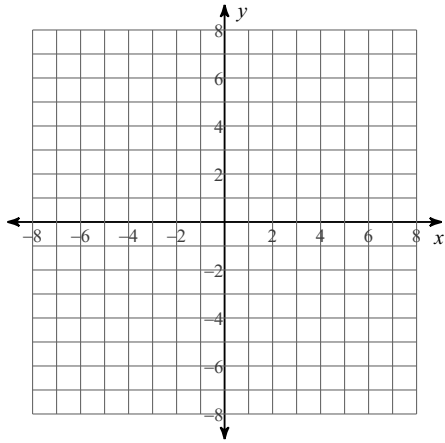


52) $y = \sqrt{x} - 3$

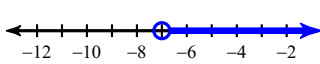
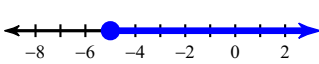


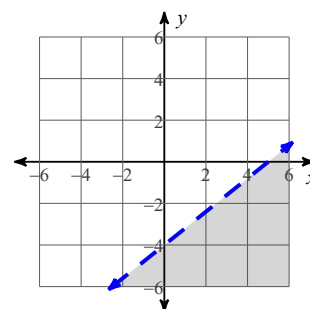
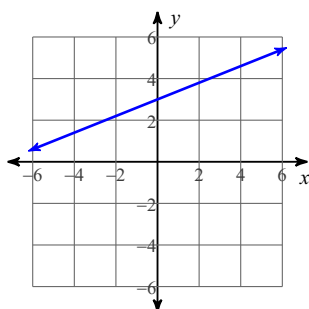
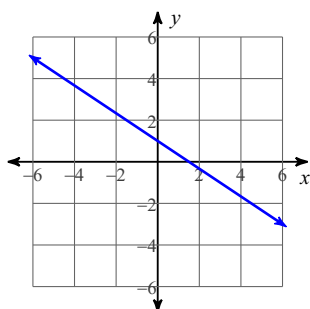
Graph each function.

$$53) f(x) = \frac{2}{x+3} + 2$$

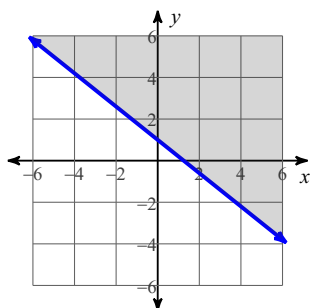


Answers to DE College Algebra Summer Review (no calculators)

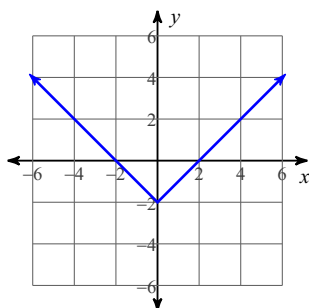
- 1) $(-4, 3)$ 2) $-4m^4 - 6m^2 - 12$ 3) $9m^3 + 8m^2 + 6$
 4) $-14k^3 - 15k^2 - 11k - 4$ 5) 105 6) 103
 7) -8 8) 6 9) $49 + 40n$ 10) $8x + 49$
 11) $2v + 6$ 12) $10 - 32r$ 13) $\frac{40}{7}n + \frac{55}{7}$ 14) $\frac{66}{35}n - \frac{121}{49}$
 15) $\{6\}$ 16) $\{4\}$ 17) $\{8\}$ 18) $\{-6\}$
 19) $n > -7$:  20) $k \geq -5$: 
 21) $\{0, -4\}$ 22) $\{6, -6\}$ 23) $\{9\}$ 24) $\{0\}$
 25) $\{6\}$ 26) $\left\{\frac{21}{4}\right\}$ 27) $\{-4, -2\}$ 28) $\{8, -1\}$
 29) $\{7, 6\}$ 30) $\{8, 2\}$ 31) $\{\sqrt{82}, -\sqrt{82}\}$ 32) $\{2, -2\}$
 33) $\{11, 1\}$ 34) $\left\{\frac{-5 + i\sqrt{215}}{12}, \frac{-5 - i\sqrt{215}}{12}\right\}$ 35) $3a^6b^5$
 36) uv^6 37) $3v^4u^4$ 38) $16x^8y^3$ 39) $(2p + 3)(2p - 3)$
 40) $(4k + 3)(4k - 3)$ 41) $(5 + 3u)(25 - 15u + 9u^2)$ 42) $(3 + 2x)(9 - 6x + 4x^2)$
 43) 44) 45)



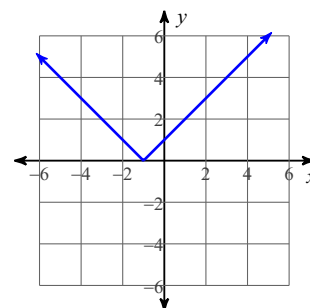
46)



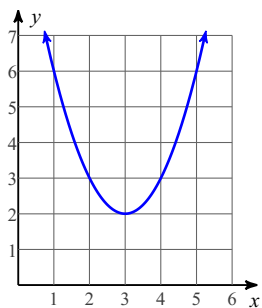
47)



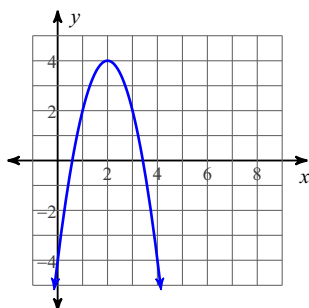
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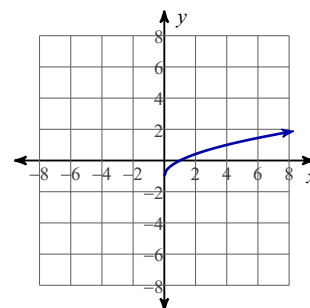
49)



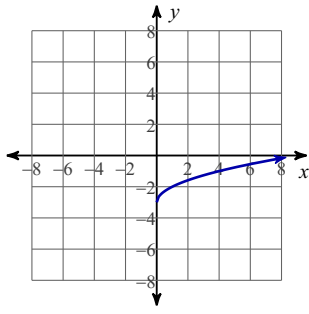
50)



51)



52)



53)

