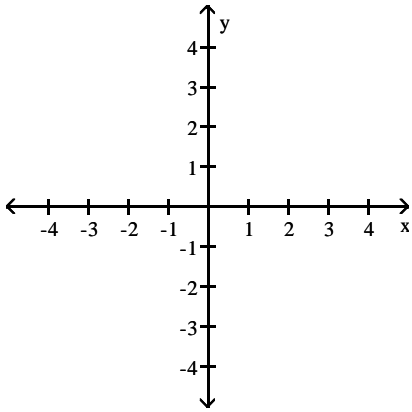


MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

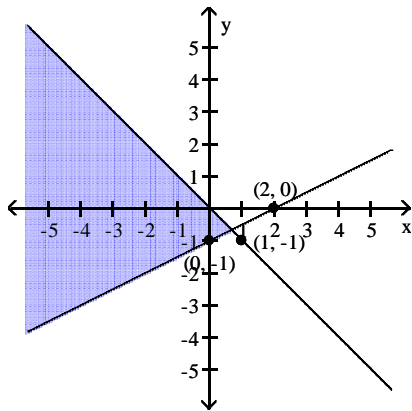
Graph the system of linear inequalities.

1) $x + 2y \leq 2$ and $x + y \geq 0$

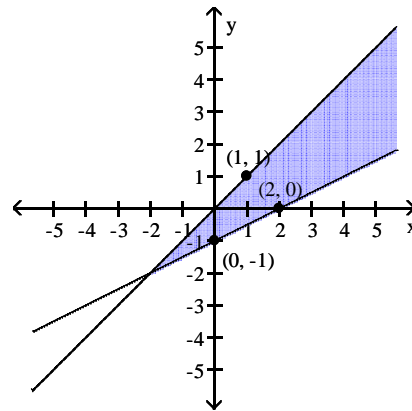
1) _____



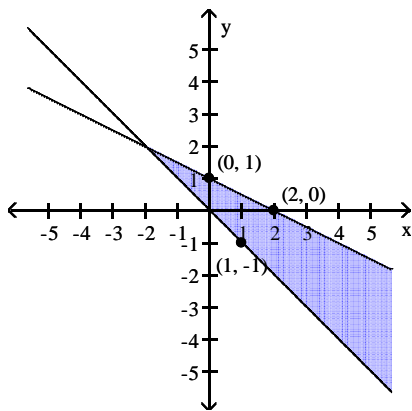
A)



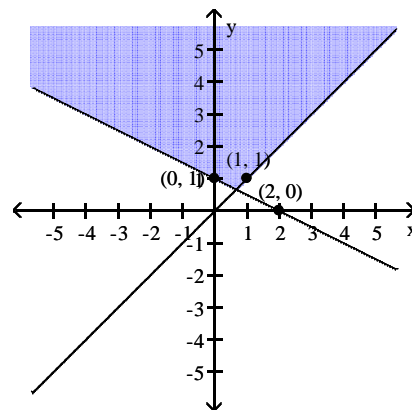
B)



C)



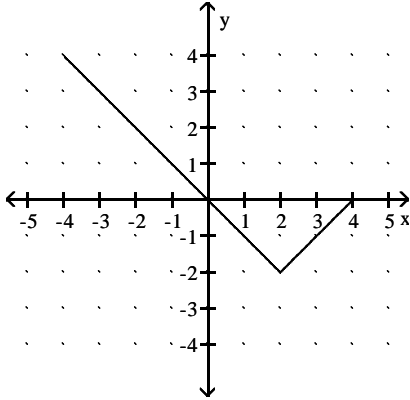
D)



For the function represented in the graph, determine the domain or range, as requested.

2) Find the domain.

2) _____

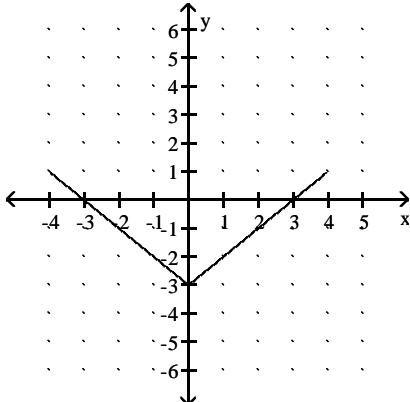


- A) $\{x \mid -4 \leq x \leq 4\}$
 C) $\{x \mid -1 \leq x \leq 1\}$

- B) $\{x \mid -1 \leq x \leq 4\}$
 D) $\{-5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5\}$

3) Find the range.

3) _____



- A) $\{-5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5\}$
 C) $\{y \mid -3 \leq y \leq 1\}$

- B) $\{y \mid 0 \leq y \leq 0\}$
 D) $\{y \mid -5 \leq y \leq 5\}$

Solve.

4) $\frac{8}{y+5} - \frac{3}{y-5} = \frac{15}{y^2 - 25}$

4) _____

- A) 70 B) 14 C) -14 D) 34

5) Martha can rake the leaves in her yard in 3 hours. Her younger brother can do the job in 7 hours. How long will it take them to do the job if they work together?

5) _____

- A) $\frac{21}{10}$ hr B) $\frac{21}{4}$ hr C) $\frac{10}{21}$ hr D) 7 hr

6) $x = \sqrt{x+13} + 7$

6) _____

- A) 3 B) 3, 12 C) 12 D) -9

7) Bob owns a watch repair shop. He has found that the cost of operating his shop is given by $c = 2x^2 - 104x + 75$, where c is the cost in dollars, and x is the number of watches repaired. How many watches must he repair to have the lowest cost?

7) _____

- A) 75 watches B) 26 watches C) 20 watches D) 37 watches

- 8) The speed of a stream is 4 mph. If a boat travels 52 miles downstream in the same time that it takes to travel 26 miles upstream, what is the speed of the boat in still water? 8) _____
- A) 14 mph B) 12 mph C) 15 mph D) 8 mph

Find an equation for the described linear function.

- 9) Through $\left(0, \frac{1}{4}\right)$ and parallel to $6x - 2y = 3$ 9) _____
- A) $y = \frac{1}{3}x + \frac{1}{4}$ B) $y = -3x + \frac{1}{4}$ C) $y = 3x + \frac{1}{4}$ D) $y = -6x + \frac{1}{4}$

Find an equation of variation for the given conditions.

- 10) y varies inversely as x, and $y = 12$ when $x = 19$ 10) _____
- A) $y = \frac{228}{x}$ B) $y = \frac{12}{19x}$ C) $y = \frac{12}{19}x$ D) $y = 228x$

Solve the problem.

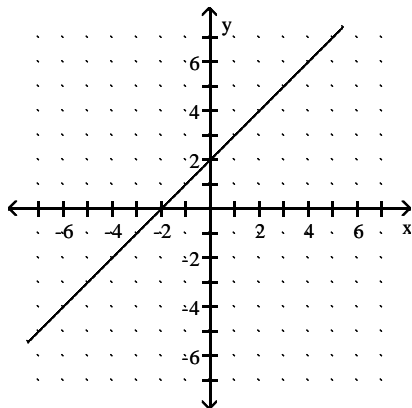
- 11) There were 400 people at a play. The admission price was \$2.00 for adults and \$1.00 for children. The admission receipts were \$570. How many adults and children attended? 11) _____
- A) 170 adults and 230 children B) 115 adults and 285 children
- C) 230 adults and 170 children D) 142 adults and 258 children

Solve by completing the square.

- 12) $p^2 + 3p - 9 = 0$ 12) _____
- A) $\frac{-3 - 3\sqrt{5}}{2}$ B) $-3 \pm 3\sqrt{5}$ C) $\frac{-3 \pm 3\sqrt{5}}{2}$ D) $\frac{3 + 3\sqrt{5}}{2}$

The graph of a function f is provided. Determine the requested function value.

- 13) $f(-2)$ 13) _____



- A) 0 B) -2 C) -4 D) 2

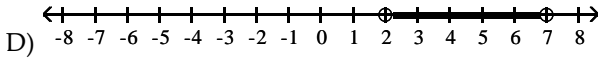
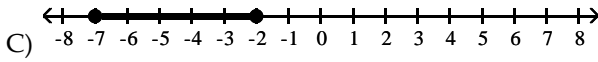
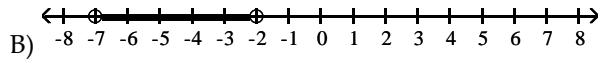
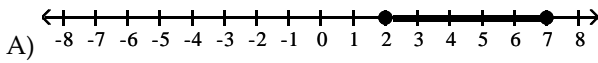
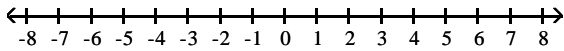
Solve the equation.

- 14) $4|8x - 6| - 8 = -6$ 14) _____
- A) $\{0.69, 0.81\}$ B) $\{1.56\}$ C) $\{0.81\}$ D) $\{-0.06, 1.56\}$

Solve the inequality and graph the solution set.

15) $-1 \leq 2t - 5 \leq 9$

15) _____



Find the function value.

16) Find $f(-1)$ when $f(x) = x^2 + 3x + 7$.

A) 11

B) -9

C) -3

D) 5

16) _____

Perform the indicated operation and simplify.

17) $\frac{2}{3x + 18} + \frac{1}{9x + 81}$

A) $\frac{7x + 60}{(3x + 6)(3x + 9)}$

B) $\frac{7x + 60}{9(x + 6)(x + 9)}$

C) $\frac{-5x + -48}{(3x + 6)(3x + 9)}$

D) $\frac{5x + 48}{9(x + 6)(x + 9)}$

17) _____

Find the line of symmetry.

18) $f(x) = 2x^2 + 12x + 13$

A) $x = 5$

B) $x = -3$

C) $x = -5$

D) $x = 3$

18) _____

Simplify. Assume that no radicands were formed by raising negative numbers to even powers.

19) $\sqrt[5]{x^{19}y^9z^{12}}$

A) $x^{15}y^5z^{10} \sqrt[5]{x^4y^4z^2}$

B) $xyz \sqrt[5]{x^4y^4z^2}$

C) $x^3yz^2 \sqrt[5]{y^4z^2}$

D) $x^3yz^2 \sqrt[5]{x^4y^4z^2}$

19) _____

Multiply. Assume that all variables represent nonnegative real numbers.

20) $\sqrt{2}(\sqrt{72} - \sqrt{2})$

A) $2\sqrt{6} - 2$

B) 14

C) $12 - \sqrt{2}$

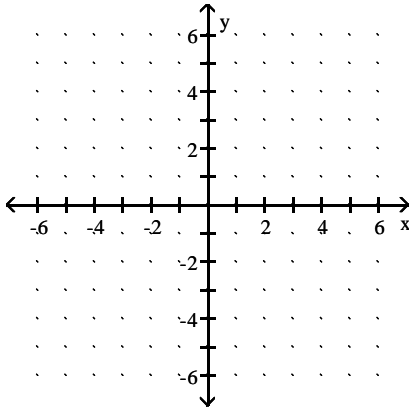
D) 10

20) _____

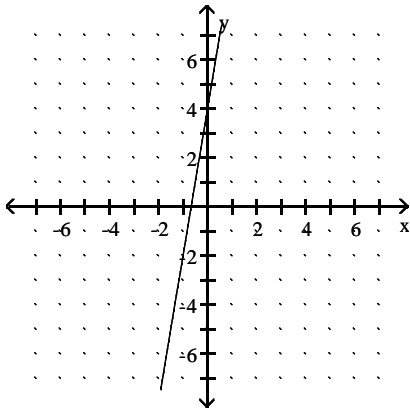
Graph.

21) $f(x) = \frac{1}{6}x + 4$ Find the slope and y-intercept

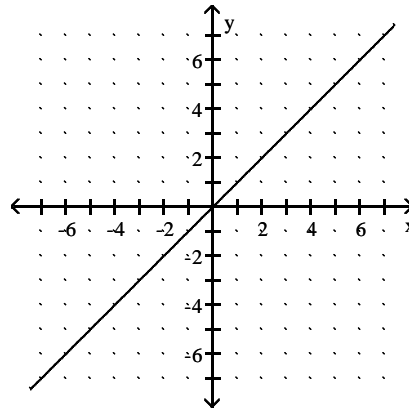
21) _____



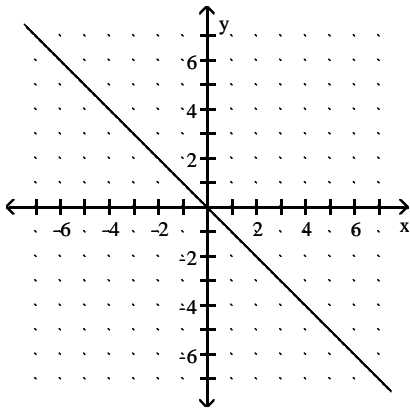
A)



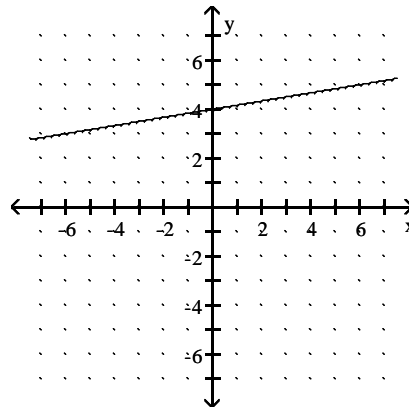
B)



C)



D)



Perform the indicated operations. Write the result in standard form.

22) $(4 - 5i)(6 - 6i)$

A) $-6 - 54i$

B) $-6 + 54i$

C) $54 - 6i$

D) $30i^2 - 54i + 24$

22) _____

Find the vertex.

23) $f(x) = 2x^2 - 20x + 47$

A) $(3, -5)$

B) $(5, -3)$

C) $(-5, 3)$

D) $(-3, 5)$

23) _____

Find the x- and y-intercepts. If no x-intercepts exist, state so.

24) $f(x) = 2x^2 + 10x + 5$

A) $\left\{ \frac{-5 \pm \sqrt{15}}{4}, 0 \right\}, (0, -5)$
C) $\left\{ \frac{-5 \pm \sqrt{15}}{2}, 0 \right\}, (0, 5)$

B) $\left\{ \frac{-10 \pm \sqrt{15}}{2}, 0 \right\}, (0, 5)$
D) $\left\{ \frac{-5 \pm \sqrt{35}}{2}, 0 \right\}, (0, -5)$

24) _____

Divide and simplify.

25) $\frac{z^2 + 7z + 12}{z^2 + 9z + 18} \div \frac{z^2 + 4z}{z^2 + 12z + 36}$

A) $\frac{z}{z^2 + 9z + 18}$

B) $z + 6$

C) $\frac{z + 6}{z}$

D) $\frac{z + 6}{z^2 + 6z}$

25) _____

Answer Key

Testname: IA TEST 4 PRACTICE

- 1) C
- 2) A
- 3) C
- 4) B
- 5) A
- 6) C
- 7) B
- 8) B
- 9) C
- 10) A
- 11) A
- 12) C
- 13) A
- 14) A
- 15) A
- 16) D
- 17) B
- 18) B
- 19) D
- 20) D
- 21) D
- 22) A
- 23) B
- 24) C
- 25) C