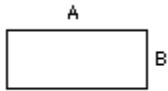


Find the area of the figure. Write the answer in lowest terms. (The area of a rectangle is the product of its length and width.)



- 1)  $A = \frac{4}{13}$  foot     $B = \frac{1}{2}$  foot    1) \_\_\_\_\_
- A)  $\frac{2}{13}$  sq. foot    B)  $\frac{4}{26}$  sq. foot    C)  $\frac{1}{3}$  sq. foot    D)  $\frac{4}{15}$  sq. foot

Find the value of the algebraic expression at the given replacement value.

- 2)  $-x^2 - 3z$  when  $x = -2$ ,  $y = 3$ ,  $z = -4$     2) \_\_\_\_\_
- A) -16    B) 8    C) -8    D) 10

Simplify the following.

- 3)  $(-6z^2)(2z^3)$     3) \_\_\_\_\_
- A)  $-12z^5$     B)  $-12z^6$     C)  $12z^6$     D)  $8z^5$

Use the power rule and the power of a product or quotient rule to simplify the expression.

- 4)  $(2x^7y)^4$     4) \_\_\_\_\_
- A)  $16x^{28}y^4$     B)  $8x^{28}y^4$     C)  $4x^{11}y^5$     D)  $2x^{28}y$

Identify the polynomial as a monomial, binomial, trinomial, or none of these. Give its degree.

- 5)  $-8s^5 - 1s - 5$     5) \_\_\_\_\_
- A) Trinomial, degree 7    B) Binomial, degree 6
- C) Trinomial, degree 6    D) Trinomial, degree 5

Solve.

- 6) One number is 5 less than a second number. Twice the second number is 10 less than 4 times the first. Find the two numbers.    6) \_\_\_\_\_
- A) 11 and 16    B) -15 and -10    C) 10 and 15    D) 9 and 14

Find the indicated value.

- 7) Find  $f(0)$  when  $f(x) = 13x - 12$     7) \_\_\_\_\_
- A) 0    B) 13    C) -12    D) 1

Solve.

- 8) Find the volume of a rectangular box 3 cm by 9 cm by 2 cm.    8) \_\_\_\_\_
- A) 36 cu. cm    B) 54 cu. cm    C) 243 cu. cm    D) 18 cu. cm

Multiply and simplify. Assume that all variables represent positive real numbers.

- 9)  $\sqrt{5} \cdot \sqrt{9}$     9) \_\_\_\_\_
- A)  $3\sqrt{5}$     B) 3    C)  $\sqrt{45}$     D)  $\sqrt{15}$

**Multiply.**

10)  $(x - 11)(x^2 + 3x - 9)$

A)  $x^3 + 14x^2 + 42x + 99$

C)  $x^3 - 8x^2 - 42x + 99$

B)  $x^3 + 14x^2 + 24x - 99$

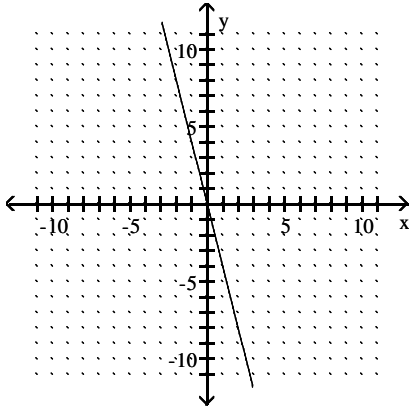
D)  $x^3 - 8x^2 - 24x - 99$

10) \_\_\_\_\_

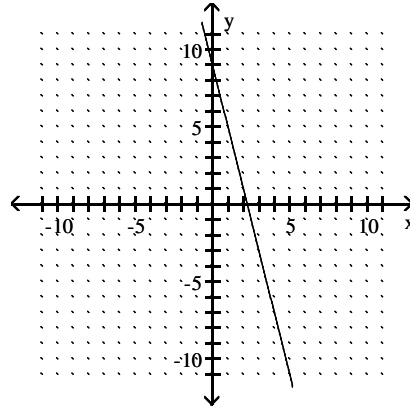
**Match the graph with the equation.**

11)  $y = -4x + 9$

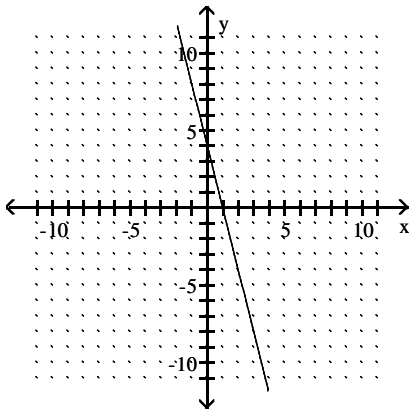
A)



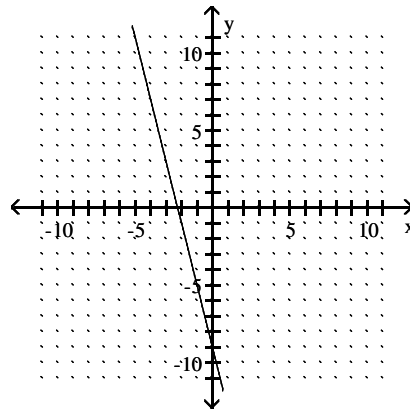
B)



C)



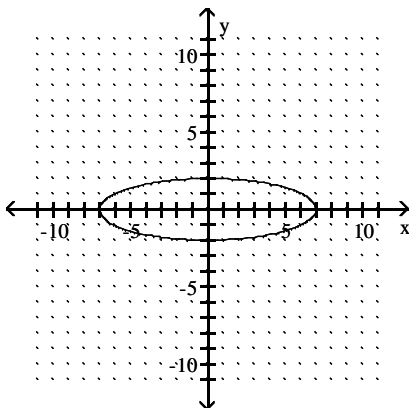
D)



11) \_\_\_\_\_

**Identify the intercepts.**

12)



A)  $(0, 2), (0, -2)$

C)  $(7, 0), (-7, 0)$

B)  $(2, 0), (-2, 0), (0, 7), (0, -7)$

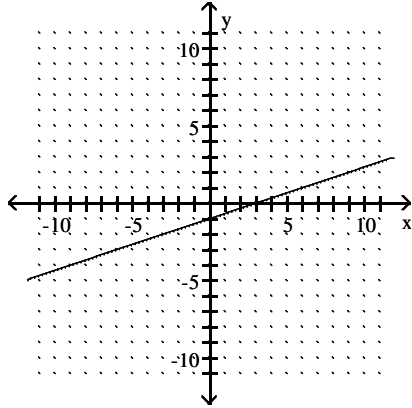
D)  $(7, 0), (-7, 0), (0, 2), (0, -2)$

12) \_\_\_\_\_

Find the slope of the line if it exists.

13)

13) \_\_\_\_\_



- A) -3                      B)  $-\frac{1}{3}$                       C) 3                      D)  $\frac{1}{3}$

Perform the indicated operations.

14)  $7z - (17 - 3z)$

14) \_\_\_\_\_

- A)  $10z - 17$                       B)  $10z + 17$                       C)  $4z + 17$                       D)  $4z - 17$

Factor as completely as possible. If unfactorable, indicate that the polynomial is prime.

15)  $x^2 + 14x + 15$

15) \_\_\_\_\_

- A) Prime                      B)  $(x + 15)(x - 1)$                       C)  $(x + 5)(x - 3)$                       D)  $(x - 5)(x + 3)$

16)  $x^2 - 20x + 400$

16) \_\_\_\_\_

- A)  $(x + 20)(x - 20)$                       B)  $(x + 20)^2$                       C)  $(x - 20)^2$                       D) Prime

Factor as completely as possible. If unfactorable, indicate that the polynomial is prime.

17)  $z^2 - 16$

17) \_\_\_\_\_

- A)  $(x - 4)^2$                       B) Prime                      C)  $(z + 4)(z - 4)$                       D)  $(x + 4)^2$

Perform the division.

18)  $\frac{20x^7 - 24x^3}{-4x^7}$

18) \_\_\_\_\_

- A)  $-5 + \frac{6}{x^4}$                       B)  $-5 + 6x^4$                       C)  $20x^7 + \frac{6}{x^4}$                       D)  $-5 - 24x^3$

Simplify.

19)  $\frac{7 + (-3)^2 + 7 \cdot 8}{7 \cdot (8 - 4)}$

19) \_\_\_\_\_

- A)  $\frac{18}{7}$                       B) 2                      C)  $\frac{106}{13}$                       D) 1

Use the point-slope form of the linear equation to find an equation of the line with the given slope and passing through the given point. Write the equation in standard form.

20) Slope -7; through  $(-5, -8)$

20) \_\_\_\_\_

- A)  $7x + y = -61$                       B)  $7x + y = 43$                       C)  $7x + y = -43$                       D)  $7x + y = -8$

Solve the equation.

21)  $\frac{x+5}{6} = \frac{x+6}{7}$

21) \_\_\_\_\_

A) 1

B)  $\frac{11}{13}$

C)  $\frac{1}{42}$

D)  $\frac{11}{42}$

Perform the indicated operation. Simplify if possible.

22)  $\frac{3}{y^2 - 3y + 2} + \frac{5}{y^2 - 1}$

22) \_\_\_\_\_

A)  $\frac{30y - 7}{(y - 1)(y + 1)(y - 2)}$

B)  $\frac{8y - 7}{(y - 1)(y - 2)}$

C)  $\frac{8y - 7}{(y - 1)(y + 1)(y - 2)}$

D)  $\frac{7y - 8}{(y - 1)(y + 1)(y - 2)}$

Find the domain of the rational function.

23)  $f(x) = \frac{2x}{9 + x}$

23) \_\_\_\_\_

A)  $\{x \mid x \text{ is a real number and } x \neq 0\}$

B)  $\{x \mid x \text{ is a real number and } x \neq -9\}$

C)  $\{x \mid x \text{ is a real number and } x \neq 9\}$

D)  $\{x \mid x \text{ is a real number and } x \neq 0, x \neq -9\}$

Solve the problem using a known formula.

24) Jim runs one time around a circular track that has a radius of 3 kilometers, and Chris runs two times around a circular track with a radius of 2 kilometers. Who ran the farther distance? (Use 3.14 as an approximation for  $\pi$ .)

24) \_\_\_\_\_

A) Jim and Chris both ran the same distance.

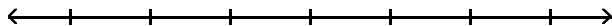
B) Jim ran a farther distance.

C) Chris ran a farther distance.

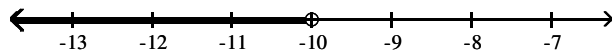
Solve the inequality, then graph the solution.

25)  $6n + 4 > 5n - 6$

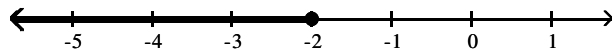
25) \_\_\_\_\_



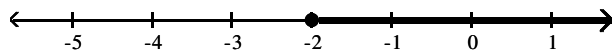
A)  $n < -10$



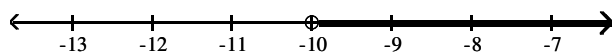
B)  $n \leq -2$



C)  $n \geq -2$



D)  $n > -10$



Simplify the expression.

26)  $\frac{(y+8)(y-6)}{(y-6)(y+9)}$

26) \_\_\_\_\_

A)  $\frac{2y-6}{2y+3}$

B)  $\frac{y+8}{y+9}$

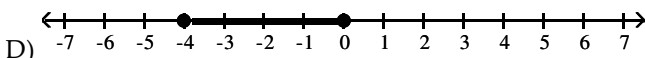
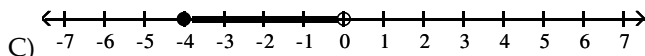
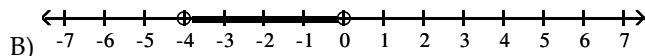
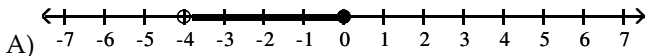
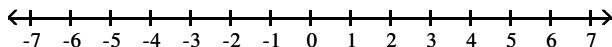
C)  $\frac{y+6}{y+3}$

D)  $\frac{y-8}{y-9}$

Graph the inequality.

27)  $-4 < x < 0$

27) \_\_\_\_\_



Multiply. Simplify if possible.

28)  $\frac{5p-5}{p} \cdot \frac{5p^2}{9p-9}$

28) \_\_\_\_\_

A)  $\frac{25p^3 - 25p^2}{9p^2 - 9p}$

B)  $\frac{45p^2 + 90p + 45}{5p^3}$

C)  $\frac{25p}{9}$

D)  $\frac{9}{25p}$

Solve the equation for the specified variable.

29) The gas law:  $\frac{PV}{T} = \frac{pv}{t}$ ; for P

29) \_\_\_\_\_

A)  $P = \frac{pvV}{tT}$

B)  $P = \frac{pvT}{tV}$

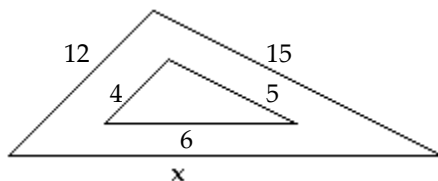
C)  $P = \frac{tvT}{pV}$

D)  $P = \frac{pV}{tTV}$

Find the missing length in the similar triangles.

30)

30) \_\_\_\_\_



A)  $x = 6$

B)  $x = 24$

C)  $x = 20$

D)  $x = 18$

Find an equation of the line. Write the equation in standard form.

31) Horizontal; through  $(0, 6)$

31) \_\_\_\_\_

A)  $x = 0$

B)  $y = 0$

C)  $x = 6$

D)  $y = 6$

Decide whether or not the ordered pair is a solution of the system.

32)  $(3, 2)$

$$\begin{aligned} 3x + y &= 11 \\ 2x + 3y &= 12 \end{aligned}$$

A) No

B) Yes

32) \_\_\_\_\_

Solve the problem.

33) One number is four more than a second number. Two times the first number is 10 more than four times the second number. What are the two numbers?

A) -9 and -13

B) 2 and -2

C) 3 and -1

D) 4 and 0

33) \_\_\_\_\_

Simplify. Assume that all variables represent positive real numbers.

34)  $\sqrt{y^{13}}$

A)  $\sqrt{y^{13}}$

B)  $y\sqrt{y^{11}}$

C)  $y^6\sqrt{y}$

D)  $y^{12}\sqrt{y}$

34) \_\_\_\_\_

Simplify. Write the answer with positive exponents.

35)  $\left(\frac{xy^6}{x^4y}\right)^{-2}$

A)  $\frac{x^6}{y^{10}}$

B)  $\frac{1}{x^{10}y^{14}}$

C)  $\frac{y^{10}}{x^6}$

D)  $\frac{1}{x^6y^{13}}$

35) \_\_\_\_\_

Solve.

36)  $x = \sqrt{3x + 18}$

A) 3, 6

B) -9

C) 6

D) -3, 6

36) \_\_\_\_\_

Use the quadratic formula to solve the equation.

37)  $3x^2 + 8x = -2$

A)  $\frac{-4 - \sqrt{10}}{6}, \frac{-4 + \sqrt{10}}{6}$

B)  $\frac{-4 - \sqrt{22}}{3}, \frac{-4 + \sqrt{22}}{3}$

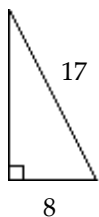
C)  $\frac{-8 - \sqrt{10}}{3}, \frac{-8 + \sqrt{10}}{3}$

D)  $\frac{-4 - \sqrt{10}}{3}, \frac{-4 + \sqrt{10}}{3}$

37) \_\_\_\_\_

Use the Pythagorean Theorem to find the missing length in the right triangle.

38)



A) 225

B)  $\sqrt{353}$

C) 9

D) 15

38) \_\_\_\_\_

Solve.

39) Find the slope of a line parallel to the line passing through  $(-5, 6)$  and  $(2, 1)$ .

A) 7

B) -11

C)  $-\frac{5}{7}$

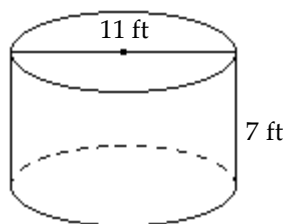
D)  $-\frac{7}{5}$

39) \_\_\_\_\_

Find the surface area of the solid.

40) Use  $\frac{22}{7}$  for  $\pi$ .

40) \_\_\_\_\_



A)  $216\frac{1}{14}$  sq. ft

B)  $276\frac{4}{7}$  sq. ft

C)  $432\frac{1}{7}$  sq. ft

D)  $665\frac{1}{2}$  sq. ft

## Answer Key

Testname: PRACTICE TEST 5

- 1) A
- 2) B
- 3) A
- 4) A
- 5) D
- 6) C
- 7) C
- 8) B
- 9) A
- 10) C
- 11) B
- 12) D
- 13) D
- 14) A
- 15) A
- 16) D
- 17) C
- 18) A
- 19) A
- 20) C
- 21) A
- 22) C
- 23) B
- 24) C
- 25) D
- 26) B
- 27) B
- 28) C
- 29) B
- 30) D
- 31) D
- 32) B
- 33) C
- 34) C
- 35) A
- 36) C
- 37) D
- 38) D
- 39) C
- 40) C