1 Solve $3(k + 8) = 21$.

A 3
B 13
C –1
D 7

2 Solve $15 = -3(x - 1) + 9$.

A 1
B –1
C 3
D –3

3 Solve $-3x - 4 = 14$.

A $3\frac{1}{3}$
B $-3\frac{1}{3}$
C –3
D –6

4 Solve $x = 7 - 2t$ for t.

A $-\frac{x-7}{2}$
B $\frac{x-7}{2}$
C $2(x + 7)$
D $x + 9$

5 Solve $\frac{d-8}{5}=p$ for d.

A $\frac{5p}{8}$

B $5p + 8$

C $p - 3$

D $5p - 8$

6 Find the slope of the line through $C(2, 5)$ and $D(4, 7)$.

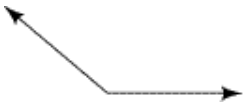
A 1

B –1

C $\frac{3}{2}$

D $-\frac{2}{3}$

7 Classify the angle as acute, right, obtuse, or straight.



A acute

B right

C obtuse

D straight

8 Judging by appearance, classify the triangle by its sides and angles.

A scalene right triangle

B isosceles right triangle

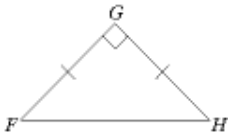
C isosceles obtuse triangle

D scalene acute triangle

9 Choose the correct picture of an equilateral triangle.

A 

B 

C 

10 Simplify -11^2.

A –22
B –121
C 22
D 121

11 Simplify $\sqrt{1,600}$.

A –80
B –40
C 40
D 800

12 Evaluate $(n - m)^2$ for $m = -3$ and $n = 7$.

A 100
B –100
C 16
D –16

13 Simplify $6y + 4m - 7y + m$.

A $-y + 4$
B $-y + 5m$
C $-13y + 5$m
D $10y - 6$m

14 Complete the statement:

35mL = ? L.

A 0.035
B 0.35
C 3.5
D 35,000

15 Complete the statement:

? ft = 8,103 yd

A 24,309
B 8,106
C 2,701
D 675.25

16 **Solve the system of equations.**

$y = x + 5$

$y = -x + 7$

A (0, 12)
B (1, 6)
C (6, 11)
D (2, 7)

17 **Solve the system of equations.**

$y = 2x - 4$

$y = 4x - 10$

A (1, –2)
B (–7, –18)
C (7, 10)
D (3, 2)

18 **Solve for the variable indicated.**

For the equation below, solve for *t*.

$I = prt$

A $t = \frac{pr}{I}$

B $t = \frac{I}{p}r$

C $t = I - (rt)$

D $t = \frac{I}{pr}$

19 **Solve for the variable indicated.**

For the equation, solve for *b*.

$A = \frac{1}{2}bh$

A $b = \frac{2A}{h}$

B $b = \frac{h}{2A}$

C $b = \frac{2h}{A}$

D $b = 2Ah$

20 Simplify.

$\frac{15b}{25b^2}$

A $\frac{1}{2b}$

B $\frac{6}{5}$

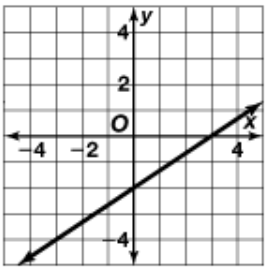
C $\frac{b}{3}$

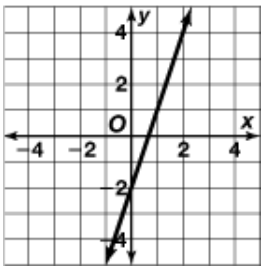
D $\frac{3}{5b}$

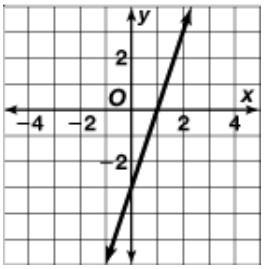
21 Solve $|t| - 2 = -1$.

A –1, 3
B –1, 1
C –3, 3
D –3, 1

22 Graph $y = 3x - 2$.

A 

B 

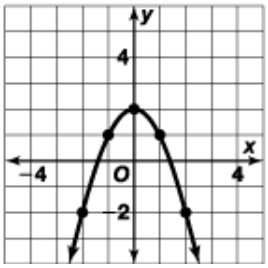
C 

23 For the function, make a table with integer values of x from –2 to 2. Then graph the function.

$y = -x^2 + 3$

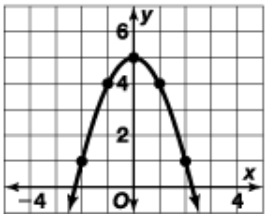
x	$-x^2 + 3 = y$	(x, y)
−2	$-(-2)^2 + 3 = -1$	(−2, −1)
−1	$-(-1)^2 + 3 = 2$	(−1, 2)
0	$-0^2 + 3 = 3$	(0, 3)
1	$-1^2 + 3 = 2$	(1, 2)
2	$-2^2 + 3 = -1$	(2, −1)

A



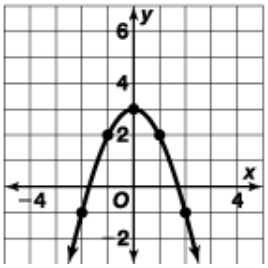
x	$-x^2 + 3 = y$	(x, y)
−2	$-(-2)^2 + 3 = -1$	(−2, −1)
−1	$-(-1)^2 + 3 = 2$	(−1, 2)
0	$-0^2 + 3 = 3$	(3, 3)
1	$-1^2 + 3 = 2$	(1, 2)
2	$-2^2 + 3 = -1$	(2, −1)

B



x	$-x^2 + 3 = y$	(x, y)
−2	$-(-2)^2 + 3 = -1$	(−2, −1)
−1	$-(-1)^2 + 3 = 2$	(−1, 2)
0	$-0^2 + 3 = 3$	(0, 3)
1	$-1^2 + 3 = 2$	(1, 2)
2	$-2^2 + 3 = -1$	(2, −1)

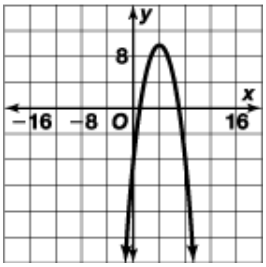
C



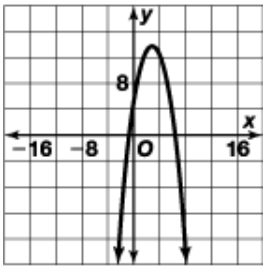
24 Graph the function.

$y = 6x - x^2$

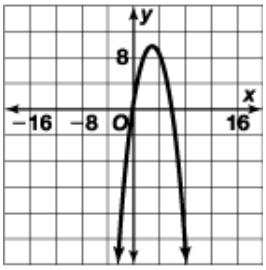
A



B



C



25 Solve $x^2 + x - 12 = 0$ by factoring.

A –4, –3
B –4, 3
C 4, –3
D 4, 3

26 Write 16% as a decimal.

A 16.0
B 0.04
C 0.16
D 1600.0

27 What percent of 250 is 138? Round to the nearest tenth.

A 55.2%
B 181.2%
C 0.6%
D 1.8%

28 Simplify.

$\sqrt{\frac{144}{9}}$

A $\frac{4}{3}$
B 4
C 16
D $\frac{144}{3}$

29 Simplify.

$\sqrt{5} \cdot \sqrt{27}$

A $3\sqrt{45}$
B $9\sqrt{15}$
C $9\sqrt{8}$
D $3\sqrt{15}$

30 Simplify $9^2 - 4^2$.

A 2
B 25
C 65
D 62.5

31 **Find the probability for one roll of a number cube.**

P(number greater than or equal to 7)

A $\frac{1}{7}$

B 0

C $\frac{1}{6}$

D 1

32 **Find the probability for one roll of a number cube.**

P(number is not 5)

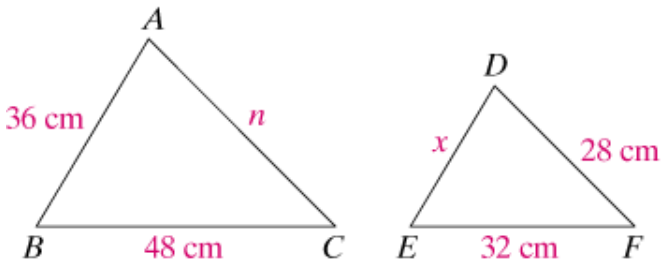
A 0

B $\frac{5}{6}$

C $\frac{1}{6}$

D 1

33 **Use the figure below.**



Express the ratio $\frac{BC}{EF}$ in simplest form.

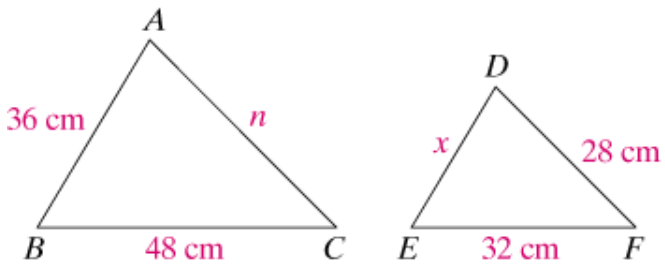
A $\frac{32\text{ cm}}{48\text{ cm}}$, or $\frac{2}{3}$

B 48 cm – 32 cm, or 16 cm

C $\frac{36\text{ cm}}{28\text{ cm}}$, or $\frac{9}{7}$

D $\frac{48\text{ cm}}{32\text{ cm}}$, or $\frac{3}{2}$

34 **Use the figure below.**



Express the ratio $\frac{AC}{DF}$ in simplest form.

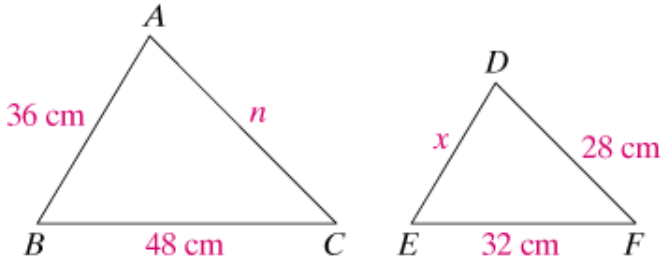
A $\frac{36 \text{ cm}}{x}$

B $n - 28$ cm

C $\frac{n}{28 \text{ cm}}$

D $\frac{x}{36 \text{ cm}}$

35 **Use the figure below.**



Express the ratio $\frac{DE}{AB}$ in simplest form.

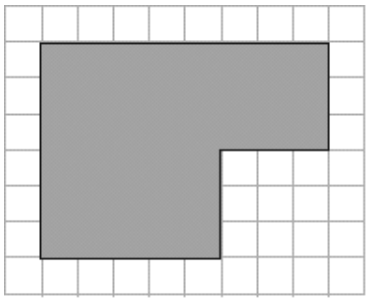
A $\frac{36 \text{ cm}}{x}$

B $36 \text{ cm} - x$

C $\frac{n}{28 \text{ cm}}$

D $\frac{x}{36 \text{ cm}}$

36 The shaded region of this map shows the dimensions of a swimming pool inside a rectangular yard. Write the ratio in simplest form for $\frac{\text{area of pool}}{\text{area of yard}}$.



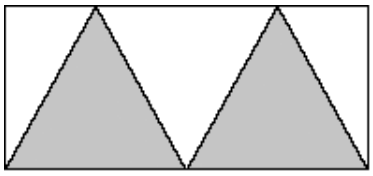
A $\frac{5}{4}$

B $\frac{4}{5}$

C $\frac{39}{80}$

D $\frac{16}{25}$

37 The figure below shows two identical shaded triangles within a rectangle.



Which statement about this figure is true?

A The shaded and unshaded areas of the rectangle are equal.

B The shaded area is $\frac{2}{3}$ of the unshaded area within the rectangle.

C The shaded area is $\frac{2}{3}$ of the total area of the rectangle.

D The shaded area is less than half the total area of the rectangle.

38 Simplify the following expression.
$(y-5)(y+9)$

A $y^2+14y-45$
B $2y+4$
C $y^2+4y-45$
D y^2+4y+4

39 Simplify the following expression.
$6r^2+5t-3r^2-8t$

A $3r^2-3t$
B $3r^2+3t$
C $9r^2-3t$
D $9r^2+13t$

40 A tray contains 12 ham sandwiches, 10 turkey sandwiches, and 8 peanut butter sandwiches. If Carrie takes a sandwich from the tray at random, what is the probability that she takes a ham sandwich?

A 8%
B 12%
C 40%
D 67%