1 Mark for Review

$s=40+2t$

The equation gives the speed s, in miles per hour, of a certain car t seconds after it began to accelerate. What is the speed, in miles per hour, of the car 4 seconds after it began to accelerate?

(A) 40

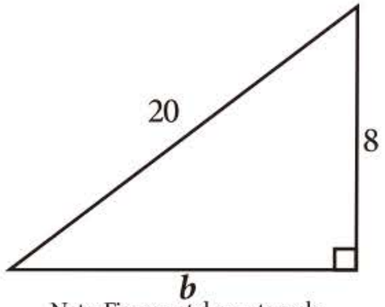
(B) 42

(C) 44

(D) 48

2 Mark for Review

Which equation shows the relationship between the side lengths of the given triangle?



Note: Figure not drawn to scale.

(A) $8b=20$

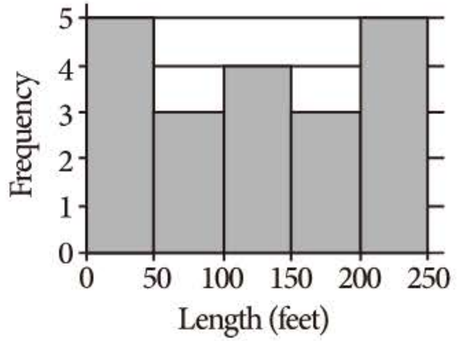
(B) $8+b=20$

(C) $8^2+b^2=20^2$

(D) $8^2-b^2=20^2$

3 Mark for Review

The histogram shows the distribution of 20 lengths, in feet, in a data set. The first bar represents the lengths that are less than 50 feet, the second bar represents the lengths that are at least 50 feet but less than 100 feet, and so on. Which of the following could be the maximum length, in feet, in this data set?



A 69

B 119

C 169

D 219

4 Mark for Review

The function f is defined by $f(x) = 8(2x + 2)$. For what value of x does $f(x) = 80$?

(A) 4

(B) 6

(C) 10

(D) 39

Student-produced response directions

- If you find **more than one correct answer**, enter only one answer.
- You can enter up to 5 characters for a **positive** answer and up to 6 characters (including the negative sign) for a **negative** answer.
- If your answer is a **fraction** that doesn't fit in the provided space, enter the decimal equivalent.
- If your answer is a **decimal** that doesn't fit in the provided space, enter it by truncating or rounding at the fourth digit.
- If your answer is a **mixed number** (such as $3\frac{1}{2}$), enter it as an improper fraction (7/2) or its decimal equivalent (3.5).
- Don't enter **symbols** such as a percent sign, comma, or dollar sign.

Examples

Answer	AnswerAcceptable ways to enter answer	Unacceptable: will NOT receive credit
3.5	3.5 3.50 7/2	31/2 3 1/2
	2/3	

5

$7x+28=7x+k$

In the given equation, k is a constant. The equation has infinitely many solutions. What is the value of k?

Answer Preview:

Student-produced response directions

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Examples

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3.5	3.5 3.50 7/2	31/2 3 1/2
	2/3	

6

A line segment that has a length of **113 centimeters (cm)** is divided into three parts. One part is **47cm** long. The other two parts have lengths that are equal to each other. What is the length, in **cm**, of one of the other two parts of equal length?

Answer Preview:

7 Mark for Review

The price of an object increased from $16 to $80. What was the percent increase in the price of the object?

A 20%

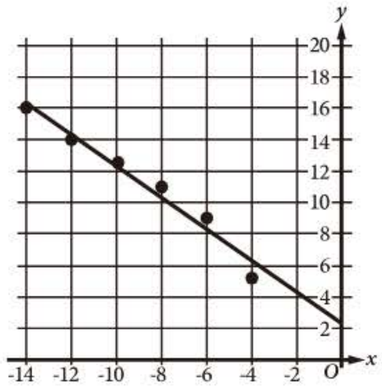
B 64%

C 80%

D 400%

8 Mark for Review

The scatterplot shows the relationship between two variables, x and y. A line of best fit is also shown. Which of the following equations best represents the line of best fit shown?



(A) y=x-16.3

(B) y=-x+16.3

(C) y=x-2.3

(D) y=-x+2.3

Student-produced response directions

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	2/3	

9

The expresstion $7x^6+9x^6-8x^6$ is equivalent to bx^6, where b is a constant. What is the value of b?

Answer Preview:

10 Mark for Review

At what point (x, y) do the graphs of the equations y=5x+8 and y=6x-2 intersect in the xy-plane?

A (5, 6)

B (6, 5)

C (10, 58)

D (58, 10)

11 Mark for Review

A rectangle has a length that is 72 times its width. The function $y=(72w)(w)$ represents this situation, where y is the area, in square feet, of the rectangle and $y>0$. Which of the following is the best interpretation of $72w$ in this context?

(A) The length of the rectangle, in feet

(B) The area of the rectangle, in square feet

(C) The difference between the length and the width of the rectangle, in feet

(D) The width of the rectangle, in feet

12 Mark for Review

$f(x)=29$

For the given linear function f, which table gives three values of x and their corresponding values of $f(x)$?

(A)

x	f(x)
0	0
1	0
2	0

(B)

x	f(x)
0	29
1	29
2	29

(C)

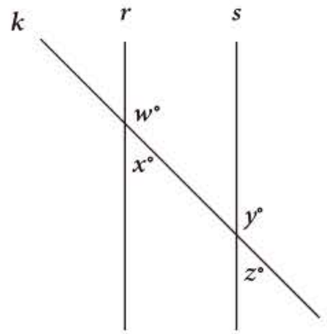
x	f(x)
0	0
1	29
2	58

(D)

x	f(x)
0	29
1	0
2	-29

13 Mark for Review

In the figure shown, line k intersects lines r and s. If w=160, which additional piece of information is sufficient to prove that lines r and s are parallel?



Note: Figure not drawn to scale.

(A) x=20

(B) y=160

(C) w+y=180

(D) y+z=180

14 Mark for Review

$x^2-4x+y^2-8y-80=0$

In the xy-plane, the graph of the given equation is a circle. If this circle is inscribed in a square, what is the perimeter of the square?

(A) 20

(B) 40

(C) 80

(D) 320

Student-produced response directions

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Examples

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3.5	3.5 3.50 7/2	31/2 3 1/2
	2/3	

15

A real estate company offers a series of three webinars, 1,250 people attended the first webinar. 46% of the people who attended the first webinar attended the second webinar, and 32% of the people who attended the first and second webinars attended the third webinar. How many people attended all three webinars?

Answer Preview:

16 Mark for Review

$f(x) = 24(2)^{\frac{x}{6}}$

Which table gives four values of x and their corresponding values of f(x) for the given exponential function?

(A)

x	-6	0	6	12
f(x)	12	0	48	96

(B)

x	-6	0	6	12
f(x)	12	24	48	96

(C)

x	-6	0	6	12
f(x)	-12	24	48	96

(D)

x	-6	0	6	12
f(x)	12	24	48	72

17 Mark for Review

A circle in the *xy*-plane has its center at (18, 16) and has a radius of 6k. Which equation represents this circle?

(A) $(x-18)^2+(y-16)^2=36k$

(B) $(x-18)^2+(y-16)^2=36k^2$

(C) $(x-18)^2+(y-16)^2=6k$

(D) $(x-18)^2+(y-16)^2=6k^2$

Student-produced response directions

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Examples

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3.5	3.5 3.50 7/2	31/2 3 1/2
	2/3	

18

To study fluctuations in leaf water potential, samples of wood were taken from 22 trees and cut in the shape of a cube. The length of the edge of one of these cubes is 3.000 centimeters. This cube has a density of 0.250 grams per cubic centimeter. What is the mass of this cube, in grams?

Answer Preview:

19 Mark for Review

$-2|5x+9|+7=-11$

What are all solutions to the given equation?

(A) 0

(B) 0 and $-\frac{7}{5}$

(C) 0 and $-\frac{18}{5}$

(D) There is no solution

20 Mark for Review

$x^2-84x-14=0$

What is the sum of the solutions to the given equation?

(A) 0

(B) 7

(C) 14

(D) 84

Student-produced response directions

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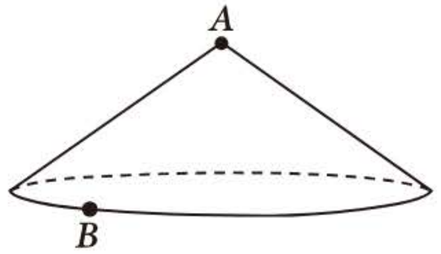
Examples

Answer	AnswerAcceptable ways to enter answer	Unacceptable: will NOT receive credit
3.5	3.5 3.50 7/2	31/2 3 1/2
$\frac{2}{3}$	2/3 .6666 .6667 0.666 0.667	0.66 .66 0.67 .67
$-\frac{1}{3}$	-1/3 -.3333 -0.333	-.33 -0.33

21

For the right circular cone shown, B is a point on the circumference of the base, and the length of segment AB (not shown) is 32 centimeters. If the height of the cone is 16 centimeters and the volume of the cone is $k\pi$ cubic centimeters, what is the value of k?



Note: Figure not drawn to scale.

Answer Preview:

22 Mark for Review

In the xy-plane, line k and line l are perpendicular and intersect at the point $(2, 8)$. If line k is defined by the equation y=mx+b, where m and b are constants and m>1, which of the following points lies on line l?

(A) $\left(3, 8 - \frac{1}{m}\right)$

(B) $\left(3, 8 + \frac{1}{m}\right)$

(C) $(3, 8 - m)$

(D) $(3, 8 + m)$