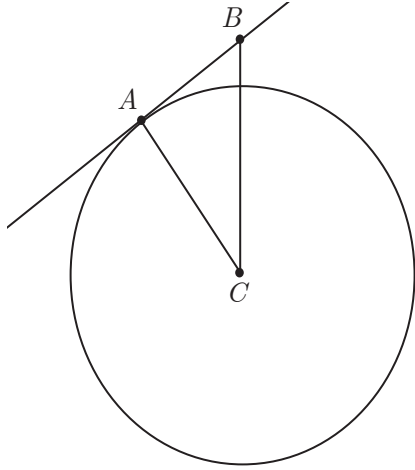


Comprehensive Math Drill

Let's do a drill involving all of the math topics we have covered throughout the book. Remember to check your answers when you finish. You can find the answers in Part V.

1 of 20



Line AB is tangent to the circle C at point A .

The radius of the circle with center C is 5 and

$$BC = \frac{10\sqrt{3}}{3}.$$

Quantity A

The length of line segment AB

Quantity B

The length of line segment AC

- Quantity A is greater.
 Quantity B is greater.
 The two quantities are equal.
 The relationship cannot be determined from the information given.

2 of 20

 $x \neq 0$

Quantity A

$$\frac{x}{10}$$

Quantity B

$$\frac{\frac{x}{5}}{2}$$

- Quantity A is greater.
 Quantity B is greater.
 The two quantities are equal.
 The relationship cannot be determined from the information given.

3 of 20

Quantity A

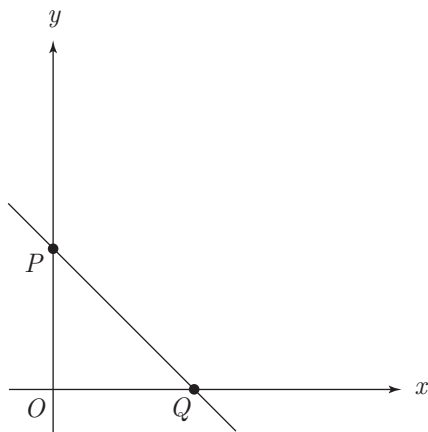
The standard deviation of the set $\{1,3,5\}$

Quantity B

The standard deviation of the set $\{8,10,12\}$

- Quantity A is greater.
 Quantity B is greater.
 The two quantities are equal.
 The relationship cannot be determined from the information given.

4 of 20



The line $y = -\frac{5}{6}x + 1$ is graphed on the rectangular coordinate axes.

Quantity A OQ **Quantity B** OP

- Quantity A is greater.
 Quantity B is greater.
 The two quantities are equal.
 The relationship cannot be determined from the information given.

5 of 20

At a dog show, there are 20 judges and 10 dogs in the final round.

Quantity A

The number of distinct pairs of judges

Quantity B

The number of possible rankings of dogs from first to third place

- Quantity A is greater.
 Quantity B is greater.
 The two quantities are equal.
 The relationship cannot be determined from the information given.

6 of 20

 $k > 0$ $l > 1$ **Quantity A**

$$\frac{1}{\frac{1}{k} + \frac{1}{l}}$$

Quantity B

$$\frac{kl}{\frac{1}{k} + \frac{1}{l}}$$

- Quantity A is greater.
 Quantity B is greater.
 The two quantities are equal.
 The relationship cannot be determined from the information given.

7 of 20

Quantity A

The greatest odd factor of 78

Quantity B

The greatest prime factor of 78

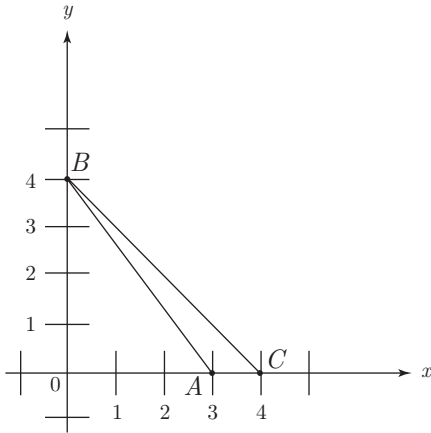
- Quantity A is greater.
 Quantity B is greater.
 The two quantities are equal.
 The relationship cannot be determined from the information given.

8 of 20

Joe has \$200. If he buys a DVD player for \$150, what is the greatest number of DVDs he can buy with the remaining money if DVDs cost \$12 each?

Click on the answer box and type in a number.
Backspace to erase.

9 of 20



What is the area of triangle ABC in the figure above?

- 2
 4
 $4\sqrt{2}$
 7
 8

10 of 20

By which of the following could $10(9^6)$ be divided by to produce an integer result?

Indicate all such values.

- 90
 100
 330
 540
 720

11 of 20

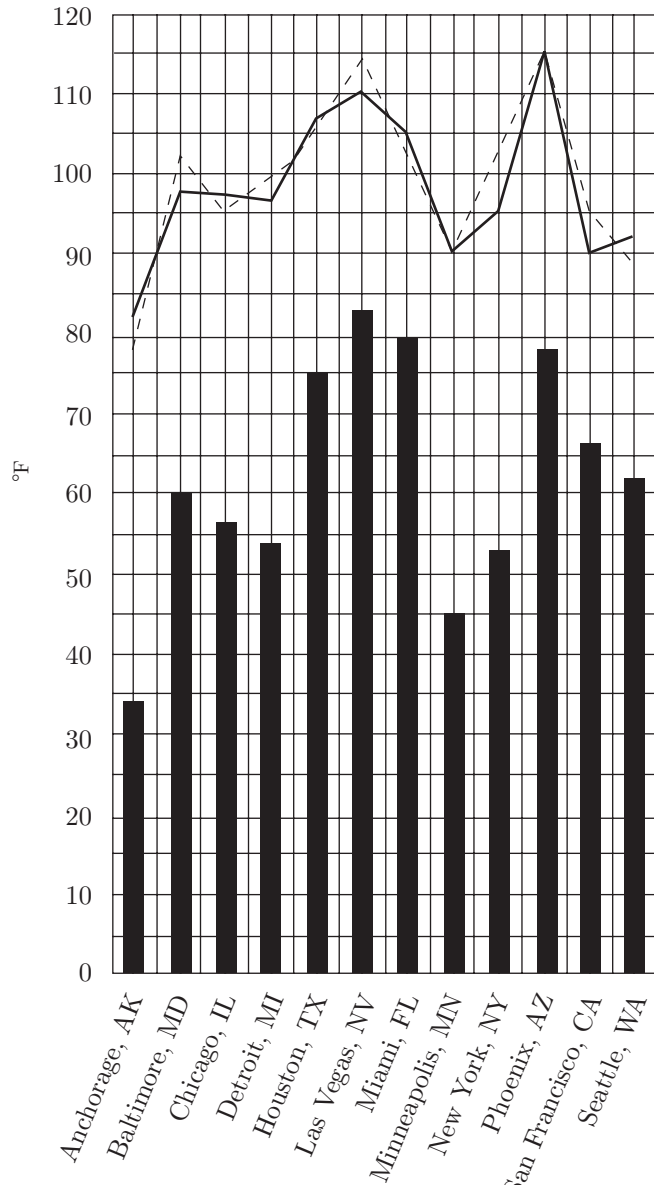
Roberta drove 50 miles in 2 hours. Her rate in miles per hour is equivalent to which of the following proportions?

Indicate all such proportions.

- 5 to 20
 100 to 4
 400 to 16
 20 to 500
 520 to 20

Questions 12 through 14 refer to the following graph.

TEMPERATURES OF U.S. CITIES IN YEARS X AND Y



Average Temperature for Years X and Y
 - - - High for Year Y
 — High for Year X

12 of 20

For how many of the cities shown was the highest temperature in Year Y greater than or equal to the highest temperature in Year X ?

- 4
- 5
- 7
- 8
- 12

13 of 20

What is the approximate percent increase from the lowest average (arithmetic mean) temperature for Years X and Y to the highest average temperature?

- 60%
- 82%
- 140%
- 188%
- 213%

14 of 20

The average (arithmetic mean) temperature for any city in Years X and Y is the average of the high and low temperatures for those years. What is the average of the low temperatures for Baltimore for Years X and Y ?

- -9° F
- 11° F
- 20° F
- 44° F
- It cannot be determined from the information given.

15 of 20

If $|2x - 3| + 2 > 7$, which of the following could be the value of x ?

Indicate all such values.

- 4
 -3
 -2
 -1
 0
 1
 2
 3

16 of 20

If x , y , and z are consecutive odd integers where $x < y < z$ and $x + y + z < z$, then which of the following could be the value of x ?

Indicate all such values.

- 3
 -1
 0
 1
 3

17 of 20

If $4^x = 1,024$, then $(4^{x+1})(5^{x-1}) =$

- 10^6
 $(5^4)(10^5)$
 $(4^4)(10^5)$
 $(5^4)(10^4)$
 $(4^4)(10^4)$

18 of 20

What is the greatest distance between two vertices of a rectangular solid with a height of 5, a length of 12, and a volume of 780?

- 12
 $12\sqrt{2}$
 13
 $13\sqrt{2}$
 $13\sqrt{3}$

19 of 20

If three boys and three girls sit in a row on a park bench, and no boy can sit on either end of the bench, how many arrangements of the children on the bench are possible?

- 46,656
 38,880
 1,256
 144
 38

20 of 20

If 16 is the average (arithmetic mean) of p , 24, and q , what is $16(p + q)$?

- 180
 192
 384
 524
 768