

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Ratios, rates, proportional relationships, and units	Medium

ID: 10fd67a3

An object has a mass of **168** grams and a volume of **24** cubic centimeters. What is the density, in grams per cubic centimeter, of the object?

- ~~A. 7~~
- B. 144
- C. 192
- D. 4,032

$$D = \frac{168}{24}$$
$$= 7 //$$

Question ID 34f7cb5d

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Ratios, rates, proportional relationships, and units	Medium

ID: 34f7cb5d

A distance of 354 furlongs is equivalent to how many feet? (1 furlong = 220 yards and 1 yard = 3 feet)

- A. 306
- B. 402
- C. 25,960
- ~~D. 233,640~~

fu fe 220 y = 660 feet
1 660
354 233,640 //

Question ID 8ce82ad5

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Ratios, rates, proportional relationships, and units	Medium

ID: 8ce82ad5

At a particular track meet, the ratio of coaches to athletes is 1 to 26. If there are x coaches at the track meet, which of the following expressions represents the number of athletes at the track meet?

- A. $\frac{x}{26}$
- ~~B. $26x$~~
- C. $x + 26$
- D. $\frac{26}{x}$

$$\frac{C}{A} = \frac{1}{26}$$
$$\frac{X}{A} = \frac{1}{26}$$
$$A = 26X //$$

Question ID 77c4a10b

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Ratios, rates, proportional relationships, and units	Medium

ID: 77c4a10b



One of a planet's moons orbits the planet every **252** days. A second moon orbits the planet every **287** days. How many more days does it take the second moon to orbit the planet **29** times than it takes the first moon to orbit the planet **29** times?

Question ID 8dd9d75e

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Ratios, rates, proportional relationships, and units	Medium

ID: 8dd9d75e



How many fluid ounces are equivalent to **76** quarts? (**8 fluid ounces = 1 cup and 4 cups = 1 quart**)

Question ID b6843bc7

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Ratios, rates, proportional relationships, and units	Medium

ID: b6843bc7



A triathlon is a multisport race consisting of three different legs. A triathlon participant completed the cycling leg with an average speed of **19.700** miles per hour. What was the average speed, in yards per hour, of the participant during the cycling leg? (**1 mile = 1,760 yards**)

Question ID 664315f9

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Ratios, rates, proportional relationships, and units	Medium

ID: 664315f9



For the values j and k , the ratio of j to k is 11 to 12. If j is multiplied by 17, what is k multiplied by in order to maintain the same ratio?

Question ID 58f4cf97

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Ratios, rates, proportional relationships, and units	Medium

ID: 58f4cf97



An insect moves at a speed of $\frac{3}{20}$ feet per second. What is this speed, in yards per second? (**3 feet = 1 yard**)

- A. $\frac{1}{20}$
- B. $\frac{9}{20}$
- C. **6**
- D. **20**

Question ID e9fe7acd

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Ratios, rates, proportional relationships, and units	Medium

ID: e9fe7acd



A competition consisted of four different events. One participant completed the first event with an average speed of **20.300** miles per hour. What was this average speed, in yards per hour? (**1 mile = 1,760 yards**)

Question ID bf75726f

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Ratios, rates, proportional relationships, and units	Medium

ID: bf75726f



The population density of Cedar County is **230** people per square mile. The county has a population of **85,100** people. What is the area, in square miles, of Cedar County?

Question ID adf742ae

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Ratios, rates, proportional relationships, and units	Medium

ID: adf742ae

If $\frac{x}{y} = 4$ and $\frac{24x}{ny} = 4$, what is the value of n ?

$$\frac{24(\cancel{4})}{n} = \cancel{4}$$
$$n = 24 //$$

Question ID 82555d76

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Ratios, rates, proportional relationships, and units	Medium

ID: 82555d76

The total mass, in kilograms, of r identical objects is t . Which expression represents the total mass, in kilograms, of $146r$ of these objects?

- A. $146 - t$

B. $146 + t$

C. $\frac{t}{146}$

~~D. $146t$~~
- โจทย์ r ชิ้นหนัก t

~~~~~ 146r ~~~~~ 146t //

# Question ID 213aaab1

| Assessment | Test | Domain                            | Skill                                                | Difficulty |
|------------|------|-----------------------------------|------------------------------------------------------|------------|
| SAT        | Math | Problem-Solving and Data Analysis | Ratios, rates, proportional relationships, and units | Medium     |

ID: 213aaab1



A distance of **61** furlongs is equivalent to how many feet? (**1 furlong = 220 yards and 1 yard = 3 feet**)

# Question ID 3e19942b

| Assessment | Test | Domain                            | Skill                                                | Difficulty |
|------------|------|-----------------------------------|------------------------------------------------------|------------|
| SAT        | Math | Problem-Solving and Data Analysis | Ratios, rates, proportional relationships, and units | Medium     |

ID: 3e19942b



A distance of 112 furlongs is equivalent to how many feet? (1 furlong = 220 yards and 1 yard = 3 feet)

Question ID f9c3e6a3

| Assessment | Test | Domain                            | Skill                                                | Difficulty |
|------------|------|-----------------------------------|------------------------------------------------------|------------|
| SAT        | Math | Problem-Solving and Data Analysis | Ratios, rates, proportional relationships, and units | Medium     |

ID: f9c3e6a3

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One side of a flat board has an area of 874 square inches. If a pressure of 19 pounds per square inch of area is exerted on this side of the board, what is the total force, in pounds, exerted on this side of the board?

$$\begin{array}{r} 19 \times \\ \hline 874 \\ \hline \end{array}$$
$$\times = 16,606 //$$

Question ID d1c59f81

| Assessment | Test | Domain                            | Skill                                                | Difficulty |
|------------|------|-----------------------------------|------------------------------------------------------|------------|
| SAT        | Math | Problem-Solving and Data Analysis | Ratios, rates, proportional relationships, and units | Medium     |

ID: d1c59f81

The ratio  $x$  to  $y$  is equivalent to the ratio 9 to 5. If the value of  $x$  is 162, what is the value of  $y$ ?

Handwritten red solution:

$$\frac{x}{y} = \frac{9}{5}$$
$$x = 162$$
$$y = 90 //$$

A red bracket on the left side of the equations indicates that the value of  $x$  is substituted into the first equation to solve for  $y$ .

# Question ID 128d0947

| Assessment | Test | Domain                            | Skill                                                | Difficulty |
|------------|------|-----------------------------------|------------------------------------------------------|------------|
| SAT        | Math | Problem-Solving and Data Analysis | Ratios, rates, proportional relationships, and units | Medium     |

ID: 128d0947



How many tablespoons are equivalent to 14 teaspoons? (**3 teaspoons = 1 tablespoon**)

# Question ID ce901565

| Assessment | Test | Domain                            | Skill                                                | Difficulty |
|------------|------|-----------------------------------|------------------------------------------------------|------------|
| SAT        | Math | Problem-Solving and Data Analysis | Ratios, rates, proportional relationships, and units | Medium     |

ID: ce901565



The ratio **140** to *m* is equivalent to the ratio **4** to **28**. What is the value of *m*?

Question ID 04943c5d

| Assessment | Test | Domain                            | Skill                                                | Difficulty |
|------------|------|-----------------------------------|------------------------------------------------------|------------|
| SAT        | Math | Problem-Solving and Data Analysis | Ratios, rates, proportional relationships, and units | Medium     |

ID: 04943c5d

For a certain rectangular region, the ratio of its length to its width is 35 to 10. If the width of the rectangular region increases by 7 units, how must the length change to maintain this ratio?

- A. It must decrease by ~~24.5~~ units.
- ~~B.~~ It must increase by ~~24.5~~ units.
- C. It must decrease ~~by 7~~ units.
- D. It must increase by ~~7~~ units.

$$\frac{L}{W} = \frac{35}{10}$$

แทนค่าเลย  $L = 35$   $W = 10$

$$\frac{L}{10 + 7} = \frac{35}{10}$$

$$L = 59.5$$

from 35 to 59.5 → increase by 24.5 //