

# SAT Math

## Ratios, Rates, Proportions, and Units 1

Question # ID

1.1 3f5398a6

For a person  $m$  miles from a flash of lightning, the length of the time interval from the moment the person sees the lightning to the moment the person hears the thunder is  $k$  seconds. The ratio of  $m$  to  $k$  can be estimated to be 1 to 5. According to this estimate, the person is how many miles from a flash of lightning if the time interval is 25 seconds?

- A. 10
- B. 9
- C. 6
- D. 5

1.2 000259aa

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A group of monarch butterflies migrated from Chicago, Illinois, to Michoacán, Mexico, flying a total of 2,100 miles. It took a single butterfly in the group 120 days to travel this route one way. On average, how many miles did the butterfly travel per day?

- A. 0.057
- B. 0.729
- C. 17.5
- D. 24

1.3 312ba47c

In a box of pens, the ratio of black pens to red pens is 8 to 1. There are 40 black pens in the box. How many red pens are in the box?

- A. 5
- B. 8
- C. 40
- D. 320

1.4 15617f62

The population density of Worthington is 290 people per square mile. Worthington has a population of 92,800 people. What is the area, in square miles, of Worthington?

- A. 102,400
- B. 93,090
- C. 320
- D. 32

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1.5 be35c117

A wind turbine completes 900 revolutions in 50 minutes. At this rate, how many revolutions per minute does this turbine complete?

- A. 18
- B. 850
- C. 950
- D. 1,400

1.6 3f236a64

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$x$	$y$
1	4
3	12
5	20
40	$k$

In the table above, the ratio of  $y$  to  $x$  for each ordered pair is constant. What is the value of  $k$ ?

- A. 28
- B. 36
- C. 80
- D. 160

1.7 6310adbc

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The ratio of  $t$  to  $u$  is 1 to 2, and  $t = 10$ .

What is the value of  $u$ ?

- A. 2
- B. 5
- C. 10
- D. 20

1.8 aeeaec96

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How many yards are equivalent to 612 inches? (1 yard = 36 inches)

- A. 0.059
- B. 17
- C. 576
- D. 22,032

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Question # ID

1.9 e9841407

Shaquan has 7 red cards and 28 blue cards. What is the ratio of red cards to blue cards that Shaquan has?

- A. 1 to 4
- B. 4 to 1
- C. 1 to 7
- D. 7 to 1

1.10 ba62b0b0

A kangaroo has a mass of 28 kilograms. What is the kangaroo's mass, in grams? (1 kilogram = 1,000 grams)

- A. 28,000
- B. 1,028
- C. 972
- D. 784

1.11 24ad9dcb

The weight of an object on Venus is approximately  $\frac{9}{10}$  of its weight on Earth. The weight of an object on Jupiter is approximately  $\frac{23}{10}$  of its weight on Earth. If an object weighs 100 pounds on Earth, approximately how many more pounds does it weigh on Jupiter than it weighs on Venus?

- A. 90
- B. 111
- C. 140
- D. 230

1.12 d0d9ede4

How many feet are equivalent to 34 yards? (1 yard = 3 feet)

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1.13 06a152cd

To make a bakery's signature chocolate muffins, a baker needs 2.5 ounces of chocolate for each muffin. How many pounds of chocolate are needed to make 48 signature chocolate muffins? (1 pound = 16 ounces)

- A. 7.5
- B. 10
- C. 50.5
- D. 120

1.14 3ac09984

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Marta has 7,500 pesos she will convert to US dollars using a currency exchange service. At this time, the currency exchange rate is 1 peso = 0.075 US dollars. The exchange service will charge Marta a 2% fee on the converted US dollar amount. How many US dollars will Marta receive from the currency exchange after the 2% fee is applied?

- A. \$551  
.25
- B. \$562  
.50
- C. \$5,625  
.00
- D. \$98,000  
.00

1.15 99550621

Makayla is planning an event in a 5,400-square-foot room. If there should be at least 8 square feet per person, what is the maximum number of people that could attend this event?

- A. 588
- B. 675
- C. 15,274
- D. 43,200

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1.16 808f7d6c

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If  $t = 4u$ , which of the following is equivalent to  $2t$ ?

- A.  $8u$
- B.  $2u$
- C.  $u$
- D.  $\frac{1}{2}u$

1.17 4347a032

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How many teaspoons are equivalent to 44 tablespoons? (3 teaspoons = 1 tablespoon)

- A. 47
- B. 88
- C. 132
- D. 176

1.18 3318d37b

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A product costs 11.00 dollars per pound. What is the cost, in dollars, for 6 pounds of the product?

1.19 4837406c

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An object travels at a constant speed of 6 centimeters per second. At this speed, what is the time, in seconds, that it would take for the object to travel 24 centimeters?

1.20 94660ba8

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A participant in a bicycle race completes the race with an average speed of 24,816 yards per hour. What is this average speed, in miles per hour? (1 mile = 1,760 yards)

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1.21 551c52b9

Tilly earns  $p$  dollars for every  $w$  hours of work. Which expression represents the amount of money, in dollars, Tilly earns for  $39w$  hours of work?

A.  $39p$

B.  $\frac{p}{39}$

C.  $p + 39$

D.  $p - 39$

1.22 7cd1c6db

An object travels at a constant speed of 12 centimeters per second. At this speed, what is the time, in seconds, that it would take for the object to travel 108 centimeters?

A. 9

B. 96

C. 120

D. 972

1.23 86636d8f

A customer spent \$27 to purchase oranges at \$3 per pound. How many pounds of oranges did the customer purchase?