Proportions

Workbook 1

Identifying Proportions

\[ \frac{5}{15} \text{ and } \frac{3}{9} \]

Proportional

\[ \frac{45}{27} \text{ and } \frac{x}{3} \]
Write whether each pair of ratios forms a proportion.

1) \( \frac{12}{7} \) and \( \frac{36}{21} \)

2) \( \frac{3}{11} \) and \( \frac{17}{6} \)

3) \( \frac{60}{55} \) and \( \frac{7}{42} \)

4) \( \frac{4}{10} \) and \( \frac{8}{20} \)

5) \( \frac{10}{24} \) and \( \frac{25}{60} \)

6) \( \frac{7}{6} \) and \( \frac{52}{48} \)

7) \( \frac{17}{8} \) and \( \frac{1}{2} \)

8) \( \frac{5}{15} \) and \( \frac{3}{9} \)

9) \( \frac{56}{72} \) and \( \frac{7}{9} \)

10) \( \frac{4}{21} \) and \( \frac{16}{84} \)
Determine whether the $x$ and $y$ values in each table are proportional.

1) | $x$ | 1 | 3 | 9 | 5 |
   | $y$ | 2 | 6 | 18 | 10 |

2) | $x$ | 2 | 4 | 8 | 6 |
   | $y$ | 6 | 12 | 24 | 21 |

3) | $x$ | -3 | 9 | -7 | 5 |
   | $y$ | 9 | -27 | 21 | -15 |

4) | $x$ | -2 | 1 | 3 | -4 |
   | $y$ | -8 | 4 | 12 | -16 |

5) | $x$ | -5 | -2 | -4 | -9 |
   | $y$ | -30 | -12 | -20 | -36 |

6) | $x$ | 4 | 8 | 10 | 12 |
   | $y$ | 10 | 16 | 22 | 24 |

7) | $x$ | 8 | -2 | 5 | 7 |
   | $y$ | 40 | -10 | 25 | 35 |

8) | $x$ | 18 | 12 | 6 | 3 |
   | $y$ | 6 | 4 | 2 | 1 |
Create a proportion using the given set of numbers.

1) 1, 4, 2, 2  
2) 5, 25, 3, 15

3) 18, 8, 12, 27  
4) 3, 9, 12, 4

5) 14, 16, 28, 8  
6) 21, 1, 3, 7

7) 8, 6, 48, 1  
8) 11, 30, 33, 10

9) 15, 24, 12, 30  
10) 49, 7, 35, 5
Create a proportion from each set of numbers. Only use 4 numbers from each set.

1) 12, 32, 10, 16, 24
2) 35, 1, 2, 10, 70

12 : 16 = 24 : 32

3) 25, 7, 16, 80, 5
4) 9, 48, 12, 6, 24

5) 60, 5, 8, 96, 11
6) 15, 63, 13, 21, 39

7) 88, 8, 61, 32, 22
8) 5, 72, 9, 21, 40

9) 6, 36, 7, 29, 42
10) 97, 63, 81, 27, 21
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1) Isaac and his friends pitched 4 Trekker tents in 60 minutes on a camping site. How long will they take to pitch 5 tents?

2) Fiona, an avid food blogger posted a total 216 recipes in 36 weeks. If she posted them at a constant rate, how many recipes did she upload in 15 weeks’ time?

3) Jacob strode up 24 steps in 12 seconds to reach his apartment on the second floor. How many steps did he climb in 9 seconds?

4) Derek uses a 52 inch flat steel bar that weighs 10.4 lb to make a rack in the garage. Find the weight of a 67-inch steel bar.

5) Mike completed an online course that contained 20 core topics in a total of 40 learning hours. How many topics did he complete in 12 hours time?

6) Alexa bought a pack of 12 cookies for $3.50 from the supermarket. How many packs of cookies can she buy for $17.50?
Write the rate and unit rate for each phrase given below.

1) 80 inches of snow over 10 days

   Rate: ________________________________

   Unit Rate: __________________________

2) 3 comic books for 3 dollars

   Rate: ________________________________

   Unit Rate: __________________________

3) 5 pounds of potatoes cost $10

   Rate: ________________________________

   Unit Rate: __________________________

4) 20 chairs in 2 rows

   Rate: ________________________________

   Unit Rate: __________________________

5) 63 peaches in 7 bowls

   Rate: ________________________________

   Unit Rate: __________________________

6) 480 hours of work in 12 weeks

   Rate: ________________________________

   Unit Rate: __________________________
1) Jessica bakes 112 muffins in 7 batches. How many muffins does each batch contain?

2) Henry is an avid reader. He devours 90 pages in half-an-hour. How many pages has Henry read per minute?

3) Simon neatly arranges 35 radio-controlled cars in 5 rows on the shelf. Find the number of cars placed in each row.

4) Diana bought two dolls for her nieces. How much did each doll cost, if she purchased them for $70?

5) On New Year’s Eve, the temperature fell by 24 degrees in a span of 6 hours. By how many degrees did the temperature fall every hour?

6) Four business class railcars in Acela express has a total capacity of 260 passengers. How many passengers can travel per railcar?
1) The O’Connor family consumes 20 jugs of milk in 4 weeks. How much milk will the family require for 8 weeks?


2) Pete bought 20 sets of crayons as return gifts for his daughter’s birthday party. He spent a total of $60 on the purchase. Find the cost of 9 crayon sets.


3) Gwenna uses 4 tomatoes to prepare soup for 2 guests. How many tomatoes will she require to make soup for 6 guests?


4) Janice drove 360 miles in 6 hours. If she travels at a constant rate, calculate the distance she will cover in 7 hours.


5) Kayla used 3 cups of flour to bake 24 muffins. How many muffins can Kayla bake with 4 cups of flour?


6) Rachel divided 105 strawberries equally into 7 boxes. How many strawberries will 5 such boxes contain?