



Grade 6 Warm Up

Feb. __, 2019

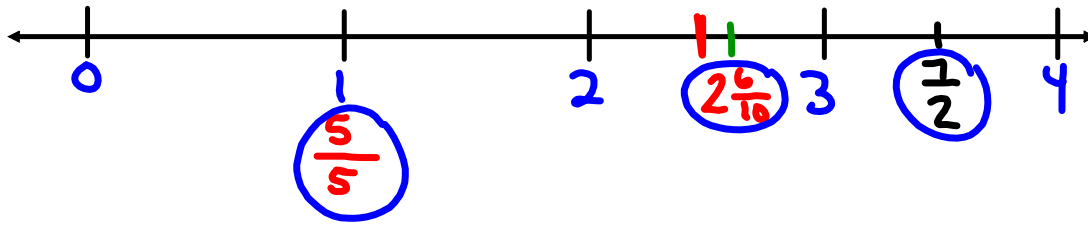


Place the numbers on the number line.

$$\frac{5}{5} = 1$$

$$2 \frac{6}{10} = 2 \frac{3}{5}$$

$$\frac{7}{2} \Rightarrow 3 \frac{1}{2}$$



Kate has 3 pairs of pants and 11 shirts. She went on a shopping spree and now she has 33 shirts. How many pairs of pants does she need to buy?



pants : shirts

$$\begin{array}{ccc} 3 & : & 11 \\ \times 3 \swarrow & & \searrow \times 3 \\ \underline{9} & : & 33 \end{array}$$

She needs to buy 9 pairs of pants.

Practice

1. Write 2 equivalent ratios for each ratio.

- a) 3:1 b) 4:2 c) 1:2 d) 5:6 e) 3:5
 f) 4:9 g) 7:8 h) 8:3 i) 1:1 j) 2:5

Handwritten solutions for question 1:

- a) $3:1 \xrightarrow{\times 2} 6:2 \xrightarrow{\times 3} 9:3$
- b) $4:2 \xrightarrow{\div 2} 2:1 \xrightarrow{\times 3} 6:3$
- c) $1:2 \xrightarrow{\times 2} 2:4 \xrightarrow{\times 3} 3:6$
- d) $5:6 \xrightarrow{\times 2} 10:12 \xrightarrow{\times 3} 15:18$
- e) $3:5 \xrightarrow{\times 2} 6:10 \xrightarrow{\times 3} 9:15$
- f) $4:9 \xrightarrow{\times 2} 8:18 \xrightarrow{\times 3} 12:27$
- g) $7:8 \xrightarrow{\times 2} 14:16 \xrightarrow{\times 3} 21:24$
- h) $8:3 \xrightarrow{\times 2} 16:6 \xrightarrow{\times 3} 24:9$
- i) $1:1 \rightarrow 2:2 \rightarrow 3:3$
- j) $2:5 \xrightarrow{\times 2} 4:10 \xrightarrow{\times 3} 6:15$

2. Write an equivalent ratio with 20 as one of the terms.

- a) $4:5 \xrightarrow{\times 5} 20:25$ b) $2:8 \xrightarrow{\times 10} 20:80$ c) $7:4 \xrightarrow{\times 5} 35:20$ d) $10:3 \xrightarrow{\times 2} 20:6$

a) $4:5 \xrightarrow{\times 5} 20:25$

3. Are the ratios in each pair equivalent? Explain how you know.

- a) 7 to 14 and 1 to 2: $7 \div 7 = 1, 14 \div 7 = 2 \rightarrow 1:2$ **Yes**
 b) 6:9 and 3:2: $6 \div 3 = 2, 9 \div 3 = 3 \rightarrow 2:3$ vs $3:2$ **No**
 c) 1 to 10 and 4 to 40: $1 \times 4 = 4, 10 \times 4 = 40 \rightarrow 4:40$ **Yes**

4. The table shows the number of beads used to make a necklace. Ginger wants to make a smaller necklace using the same ratio of pink to white beads. How many different necklaces could Ginger make? How do you know?

Colour	Number
Pink	30
White	35

$30 + 35 = 65$ beads

Pink : White
 $30 : 35 \xrightarrow{\div 5} 6 : 7$
 $12 : 14$
 $18 : 21$
 $24 : 28$

5. In a card game, each player is dealt 5 cards. Make a table to show the total number of cards dealt for each number of players from 3 to 6. Write each ratio of players to cards dealt.

Number of Players	Total Number of Cards Dealt

6. Ms. Olivieri's class plays a game in teams. Each team has the same number of students. The ratio of teams to players is 8:32.

Team: ^{Total} Players
8 : 32

a) How many students are in Ms. Olivieri's class? 32
b) How many students are on each team?
 $32 \div 8 = 4$ students



7. Atiba plays for the Linden Woods Vipers in the Winnipeg Youth Soccer League. The ratio of players to soccer balls at practice sessions is 5:2.

Players : Soccer balls
 $5 : 2$
 $\times 4$ $\left(\begin{array}{l} 5 \\ 20 \end{array} \right) : \left(\begin{array}{l} 2 \\ 8 \end{array} \right)$ $\times 4$
Need 8 soccer balls for 20 players

8. The word "fun" has a vowel-to-consonant ratio of 1:2.
a) Find 3 words with a vowel-to-consonant ratio of 2:3.
b) Choose a vowel-to-consonant ratio and find 3 words for it.

Many answers $2:3$
v: c

a) $\frac{b}{a} \frac{k}{e} \frac{f}{i}$
v

a) beans

9. Su Mei's recipe for bean salad calls for 3 cans of lima beans, 2 cans of pinto beans, and 1 can of kidney beans. Su Mei is making bean salad for her family reunion. Suppose she uses 9 cans of lima beans.

Lima: Pinto: kidney
 $3 : 2 : 1$
 $\times 3$ $\left(\begin{array}{l} 3 \\ 9 \end{array} \right) : \left(\begin{array}{l} 2 \\ 6 \end{array} \right) : \left(\begin{array}{l} 1 \\ 3 \end{array} \right)$

a) How many cans of pinto beans will she use? 6
b) How many cans of kidney beans will she use? 3

10. Katherine has diabetes. At each meal, she must estimate the mass in grams of carbohydrates she plans to eat, then inject the appropriate amount of insulin. Katherine needs 1 unit of insulin for 15 g of carbohydrates. Katherine's lunch has 60 g of carbohydrates. How many units of insulin should Katherine inject?

Insulin: Carbs
 $1 : 15g$
 $\times 4$ $\left(\begin{array}{l} 1 \\ _ \end{array} \right) : \left(\begin{array}{l} 15g \\ 60g \end{array} \right)$ $\times 4$
needs 4 units

11. To make a jug of plant fertilizer, Malaika uses 6 cups of water and 3 scoops of fertilizer. Bart uses 8 cups of water and 5 scoops of fertilizer. Will Malaika's and Bart's plant fertilizer have the same strength? Explain.

Bart
cups water: ^{scoop} fertilizer
 $8 : 5$
 $\times 3$ $\left(\begin{array}{l} 8 \\ 24 \end{array} \right) : \left(\begin{array}{l} 5 \\ 15 \end{array} \right)$ $\times 3$
Take to same water or fer.

Malaika
cups Water: ^{scoops} Fertilizer
 $6 : 3$
 $\times 5$ $\left(\begin{array}{l} 6 \\ 30 \end{array} \right) : \left(\begin{array}{l} 3 \\ 15 \end{array} \right)$ $\times 5$
uses more water so weaker

12. Use counters to find all the ratios that are equivalent to 2:3 and have a second term that is less than 40. List the ratios.

Fill in the missing equivalent ratios (Show your work)

a) $3 : 7 = \underline{15} : 35$

Handwritten work: A blue arrow labeled 'x5' points from 3 to 15. A green arrow labeled 'x5' points from 7 to 35.

b) $15 : 24 = 5 : \underline{8}$

Handwritten work: A red arrow labeled '÷3' points from 15 to 5. A green arrow labeled '÷3' points from 24 to 8.

c) $\underline{11} : 12 = 33 : 36$

Handwritten work: A blue arrow labeled '÷3' points from 33 to 11. A black arrow labeled '÷3' points from 36 to 12.

Handwritten note: 7+2=9 total

2) The ratio of cats: dogs at a shelter is 7: 2. If there is a total of 36 animals at the shelter, then how many are dog and how many are cats?

Cats : Dogs : Total

$\underline{7} : \underline{2} : 9$

Handwritten work: Purple arrows labeled 'x4' point from 7 to 28, from 2 to 8, and from 9 to 36. The final result is $\underline{28} : \underline{8} : 36$.

There is
28 cats
and
8 dogs at the shelter.

The word math has a **consonant - to - vowel** ratio of **3 : 1**

a e i o u y

Write down 4 words from the following list that have the same ratio. **C:V**

frog mice dog hat spun glad
cat spin drag add fun today **C:V**
kitten top plug man sad meet **2:3**

Class/Homework

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#4, 6, 7, 9, 10, 11

Pink : White
 $30 : 35$ $\div 5$
 $6 : 7$
 $12 : 14$ $\times 2$
 $18 : 21$
 $24 : 28$
"Tuesday"

Quiz not tomorrow but the next day

Need more

Worksheet on next page

Math 6 Worksheet

Equivalent
Fractions

Name: _____ Ch. 5 (Ratios)

A) Check for equivalency.

- 1) Are 2 : 3 and 10 : 15 equivalent? Yes No
- 2) Are 8 : 12 and 4 : 5 equivalent? Yes No
- 3) Are 21 : 6 and 7 : 2 equivalent? Yes No
- 4) Are 6 : 9 and 24 : 32 equivalent? Yes No

B) Find the unknown value in each problem.

1) $5:6 = 15:m$

2) $k:5 = 7:1$

3) $6:16 = 3:p$

$m = \underline{\hspace{2cm}}$

$k = \underline{\hspace{2cm}}$

$p = \underline{\hspace{2cm}}$

4) $36:63 = s:7$

5) $9:y = 27:15$

6) $u:3 = 2:6$

$s = \underline{\hspace{2cm}}$

$y = \underline{\hspace{2cm}}$

$u = \underline{\hspace{2cm}}$

C) An urn has four different color balls. The ratio of blue balls to red balls is 3:7 and the ratio of green balls to yellow balls is 9:21. Are the ratios of blue balls to red ball and green balls to yellow balls equivalent?



Practice

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 f) 4:9 g) 7:8 h) 8:3 i) 1:1 j) 2:5

2. Write an equivalent ratio with 20 as one of the terms.

- a) 4:5 b) 2:8 c) 7:4 d) 10:3

3. Are the ratios in each pair equivalent? Explain how you know.

- a) 7 to 14 and 1 to 2 b) 6:9 and 3:2 c) 1 to 10 and 4 to 40

4. The table shows the number of beads used to make a necklace.

Ginger wants to make a smaller necklace using the same ratio of pink to white beads. How many different necklaces could Ginger make? How do you know?

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Number of Players	Total Number of Cards Dealt

6. Ms. Olivieri's class plays a game in teams. Each team has the same number of students. The ratio of teams to players is 8 : 32.
- How many students are in Ms. Olivieri's class?
 - How many students are on each team?

1 team has 4 players

Teams : Players
 $8 : 32$
 $\div 8 \quad \div 8$
 $1 : 4$ ← # students



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9. Su Mei's recipe for bean salad calls for 3 cans of lima beans, 2 cans of pinto beans, and 1 can of kidney beans. ~~Su Mei is making a bean salad for her family reunion.~~ Suppose she uses 9 cans of lima beans.

- How many cans of pinto beans will she use? **6 cans**
- How many cans of kidney beans will she use? **3 cans**

$L : P : K$
 $3 : 2 : 1$
 $\times 3 \quad \times 3 \quad \times 3$
 $9 : 6 : 3$

10. Katherine has diabetes. At each meal, she must estimate the mass in grams of carbohydrates she plans to eat, then inject the appropriate amount of insulin. Katherine needs 1 unit of insulin for 15 g of carbohydrates. Katherine's lunch has 60 g of carbohydrates. How many units of insulin should Katherine inject?

In : Carb
 $1 : 15g$
 $? : 60g$

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