

Ratio and Proportion Practice

1. State if ratio is part to part or part to whole

- a. 17 people in a class of 25 have brown hair
- b. 3 quarters to 5 nickels
- c. A hockey team wins 56 out of 80 games
- d. The number of vowels to the number of consonants

2. Write each ratio in lowest terms

- a. 4:12
- b. 10:1000
- d. $\frac{15}{45}$
- e. $\frac{600}{1500}$

3. Find the unknown value in each proportion

a. $\frac{s}{5} = \frac{4}{20}$

b. $\frac{r}{15} = \frac{3}{5}$

c. $\frac{15}{d} = \frac{3}{2}$

$$\text{d. } \frac{9}{12} = \frac{3}{p}$$

$$\text{e. } \frac{24}{3} = \frac{r}{9}$$

$$\text{f. } \frac{4}{6} = \frac{10}{y}$$

Show all work. Round to the nearest hundredth or appropriate unit.

$$\text{a. } \frac{24}{18} = \frac{x}{12}$$

$$\text{d. } \frac{87 \text{ blankets}}{x \text{ bundles}} = \frac{24 \text{ blankets}}{8 \text{ bundles}}$$

$$\text{b. } \frac{168 \text{ km}}{2h} = \frac{548 \text{ km}}{xh}$$

$$\text{e. } \frac{6 \text{ pizza slices}}{2 \text{ people}} = \frac{x \text{ pizza slices}}{21 \text{ people}}$$

$$\text{c. } \frac{40}{28} = \frac{60}{x}$$

$$\text{f. } \frac{7}{15} = \frac{x}{1}$$

Convert the following information into a ratio!

1. What is the ratio of 250mL of grape juice concentrate to 1L of water? (Hint: convert both measurements to the same units. There are 1000mL in 1L)

2. Some conveyor belts have two pulleys. If one pulley has a diameter of 45cm and another has a diameter of 20 cm, what is the ratio of the smaller diameter to the larger diameter?

3. A mechanic mixes oil with gas to lubricate the cylinders in a motorcycle engine. He uses 1-part oil and 32 parts gas. What is the ratio of oil to gas?

Use a proportion to answer the following questions. Round to 2 decimal places where required.

4. If Stephanie can type 75 words per minute, how long will it take her type an 800-word term paper?

5. If a machine can produce 85 parts in 40 minutes, how many parts can it produce in 8 hours?

6. If 5cm on a map represents 2.5km of actual ground, how many centimetres would 15km of actual ground be on the map?

7. An office has decided to track how much paper it uses to reduce waste. At the end of each month, the secretary records the total number of sheets used and their weight. If paper weighs 4.9kg for every 500 sheets, how much will 700 sheets weight?

8. A hairdresser mixes brunette hair colouring for a client using 20mL hair colour, 40mL colour developer, 15mL conditioner and 3mL thickener. Find the following ratios and simplify them to lowest terms. Express your answers as fractions.

a. The ratio of hair colour to thickener?

b. The ratio of thickener to conditioner.

c. The ratio of colour developer to hair colour.

9. If the ratio of yellow pigment to blue pigment in a shade of green is 2:3, how many drops of yellow pigment will be needed if 12 drops of blue are used?

10. If a can of paint will cover 48m^2 of wall space, how many cans will you need to paint 220m^2 ?

11. For a silk screening project, Jan mixes a shade of orange ink. She uses a ration of red ink to yellow ink of 2:3 and yellow ink to white ink of 3:1.

a. How many mL of yellow ink would she need if she used 500mL of white ink?

b. How many mL of red ink would she need if she used 750mL of yellow ink?

12. A compound of two chemicals is mixed in the ratio of 3:10. If there are 45 litres of the compound, how much of each chemical is in the mixture?

13. Cheryl is an automotive repair technician. She mixes paint and thinner to apply to a bus. The instructions say to mix the paint with thinner in a ratio of 5:3. If Cheryl needs 24L of paint/thinner mixture, how much of each with she use?