

2.11 HOMEWORK HANDOUT: SOLVING PROPORTIONS

PART A

- Solve the proportions.
 - $16 : 20 = y : 5$
 - $\frac{2}{r} = \frac{5}{20}$
 - $v : 3 = 2 : 29$
 - $8 : 5 = 2 : f$
 - $\frac{5}{y} = \frac{8}{20}$
 - $\frac{6}{7} = \frac{p}{24.5}$
 - $\frac{5}{m} = \frac{2}{3} = \frac{11}{n}$
- To make 1500 mL of orange juice, Tamara uses 375 mL of frozen concentrate and 1125 mL of water.
 - Write a ratio, in simplest form, to compare the amount of frozen concentrate to the total amount of orange juice.
 - Write a ratio, in simplest form, to compare the amount of water to the total amount of orange juice.
 - How much frozen concentrate and water are needed to make 1000 mL of the orange juice?
- One recipe for fresh lemonade uses 425 mL of lemon juice, 2000 mL of water, and 375 mL of sugar.
 - Write a ratio, in simplest form, to compare the amount of lemon juice to the amount of water.
 - Write a ratio, in simplest form, to compare the amount of lemon juice to the amount of sugar.
 - Write a ratio, in simplest form, to compare the amount of sugar to the amount of water.
 - How much sugar is needed to mix with 850 mL of lemon juice?
 - How much water is needed to mix with 150 mL of sugar?
- Seven out of ten people prefer FastPop popcorn. How many would prefer FastPop in a group of 150 people?
- In a photograph of a mother and her son standing together, the son measures 27 mm and the mother 63 mm. If the mother is actually 180 cm tall, what is the exact height of her son?
- A rectangular box is to be constructed with the ratio of length to width to height equal to 3:2:5. If the length is 25 cm, find the height.
- A hospital gift shop sells 4 magazines for every 3 books. One Friday, the shop sold 35 books and magazines altogether. How many of each kind did it sell?
- In Vancouver, the number of days with precipitation in January is 29. Express the number of days with precipitation as a percent of the 31 days in January. Round to one decimal place.

9. The human body's mass is made up of 1.5% calcium. What amount of calcium is in a body having mass of 60 kg?
10. Annette received a mark of 66 on her chemistry test. If this mark was 75%, what was the test out of?
11. A pair of jeans were originally priced at \$129.99. The jeans are on sale for \$103.99.
 - a) Find the percent discount, to the nearest whole number.
 - b) What sale price would represent a 25% discount?

PART B

12. Allison jogged 7 km in 40 minutes while training for rugby. At this rate, what distance will she cover in $1\frac{1}{2}$ hours?
13. When a robin flies, it beats its wings about 23 times in 10 seconds. How many times will it beat its wings in 2 minutes?
14. The perimeter of a rectangle is equal to 280 meters. The ratio of its length to its width is 5:2. Find the area of the rectangle.
15. The angles of a triangle are in the ratio 1:3:8. Find the measures of the three angles of this triangle.
16. The aspect ratio of a tv screen is the ratio of the measure of the horizontal length to the measure of the vertical length. Find the horizontal length and vertical height of a tv screen with an aspect ratio of 4:3 and a diagonal of 50 inches.

ANSWERS

- 1) a) $y = 4$ b) $r = 8$ c) $v = \frac{6}{29}$ d) $f = \frac{5}{4}$ e) $y = \frac{25}{2}$ f) $p = 21$ g) $m = \frac{15}{2}$, $n = \frac{33}{2}$
- 2a) 1:4 b) 3:4 c) 250 mL of concentrate, 750 mL of water
- 3a) 17:80 b) 17:15 c) 3:16 d) 750 mL e) 800 mL
- 4) 105 people 5) $77\frac{1}{7}$ cm 6) 41.7 cm 7) 20 magazines, 15 books 8) 93.5%
- 9) 0.9 kg 10) 88 11a) 20% b) \$97.49
- 12) 15.75 km 13) 276 times
- 14) 4000 m^2 15) 15° , 45° and 120°
- 16) horizontal length = 40 inches and vertical length = 30 inches