

Worksheet 3.1 Ratio, Rate and Proportion

- Write a ratio in simplest form that represents:
 - the number of &'s to the total number of figures? & & & % % % @ @ @ @ @ @ @ @ @ @
 - the value of a nickel to a dime.
 - the value of five dollars to three nickels.
 - \$5.35 to 25¢.
- A local restaurant purchased 45 pounds of flour at a total cost of \$38.25. Determine the unit cost per pound.
- Write each ratio as a fraction in simplest form.
 - 48 : 76
 - 20 inches to 4 feet (recall: There are 12 inches in 1 foot)
 - 81 km to 240 m.
- Find each unit rate. Round your answer to the nearest hundredth if necessary.
 - 640 miles in 25 hours
 - \$30.50 for 32 ounces of specialty cooking oil
 - Seven notebooks at the school supply store cost \$4.76.
- A rectangle measures 20 cm at its width and 5 cm at its length. Find the ratio of the length to the width to the perimeter of the rectangle in lowest form.
 - 1:4:10
 - 4:1:10
 - 5:20:50
 - 20:5:50
 - None of these.
- Which ratio is equivalent to 48:72?
 - 3:4
 - 2:3
 - 8:10
 - 7:9
- Which ratio is equivalent to $\frac{21}{56}$?
 - $\frac{4}{7}$
 - $\frac{12}{15}$
 - $\frac{12}{32}$
 - $\frac{4}{12}$
- Which ratio is equivalent to $\frac{7}{8}$?
 - $\frac{2}{7}$
 - $\frac{42}{48}$
 - $\frac{35}{56}$
 - $\frac{21}{32}$
- Seventy-eight children attended a trip to the fair. 60 of them were girls. Find the ratio of the number of girls to boys.
 - 60:78
 - 18:60
 - 10:3
 - 60:78
 - 3:10
- Johnny has a bag full of marbles that he keeps in his desk. He has 35 red marbles and 25 green marbles. Find the ratio of red marbles to total marbles, and put it in its simplest form.
 - 35:25
 - 7:5
 - 12:7
 - 35:60
 - 7:12
- Determine if each pair of ratios forms a proportion. Show your work.
 - $\frac{30}{80}$ and $\frac{12}{32}$
 - $\frac{12}{15}$ and $\frac{2}{3}$
 - $\frac{6}{9}$ and $\frac{14}{21}$
- Solve for the missing number(s) in each proportion.
 - $\frac{24}{17} = \frac{m}{34}$
 - $\frac{14}{a} = \frac{4}{14}$
 - $\frac{5}{9} = \frac{3}{y}$
 - $\frac{5}{7} = \frac{13}{p} = \frac{r}{35}$
 - $\frac{120}{77} = \frac{x}{100}$
 - 1:3:6 = m:n:40
- The ratio of boys to girls at the dance was 9 to 5. How many boys were at the dance if there were 85 girls at the dance?
- The ratio of teachers to students in a school is 2 to 45. How many teachers are in the school if there is a total of 1410 students and teachers altogether in the school?
- In a school there are four boy scouts to every three girl scouts. If there are forty-two girl scouts, how many boy scouts are there?
 - 56 boy scouts
 - 56 girl scouts
 - 31.5 girl scouts
 - 31.5 boy scouts
 - 48 boy scouts
- The Crusaders basketball team scored 190 points in 4 games. At this rate, how many points would they score in a 13 game season?
- Seven out of eight athletes attended the athletic banquet last year. This year there are 360 students involved in athletics. If the ratio of athletes attending the banquet this year is proportional to last year, how many students will attend the banquet this year?
- Jolen sold 7 cars in 15 days. At this rate, how many cars could she expect to sell in 190 days?
- The most popular hot dog topping at the ball park is a mixture of tomatoes, mustard and chopped onions in a ratio of 5:3:2. How many kg of tomatoes and mustard should be added to 25 kg of chopped onions?
- A pipeline 40 m long is to be cut into two pieces in a ratio of 4:1. How long is each piece?
- An eccentric millionaire divided his wealth among his four children in a ratio according to their ages. If they are 21, 23, 26 and 30 years old, and his fortune is \$156 000 000, how much did each receive?

Answers: 1.(a) 1:4 (b) 1:2 (c) 100:3 (d) 107:5 2. \$0.85/lb 3. (a) $\frac{12}{19}$ (b) $\frac{5}{12}$ (c) $\frac{675}{2}$ 4. (a) 25.6 mph (b) \$0.95/oz.
4 (c) 68¢/book 5. A 6. B 7. C 8. B 9. C 10. E 11.a) Yes b) No c) Yes 12 .a) m=48 b) a=49 c) y=5.4 d) p=18.2, r=25
12 e) 12000/77 f) m = $\frac{20}{3}$, n = 20 13. 153 14. 60 15. A 16. 617 or 618 17. 315 18. 88 19. 62.5 kg tomatoes, 37.5 kg mustard
20. 32 m, 8 m 21. \$32 760 000, \$35 880 000, \$40 560 000, \$46 800 000