

MAT 0012 Basic Algebra I

KEY CONCEPT REVIEW

SECTIONS 6.1 – 6.4

TO RECEIVE CREDIT, DO ALL PROBLEMS, MAKE CORRECTIONS, AND SHOW ALL WORK.

Write each ratio as a fraction in simplest form.

1) 38 to 18

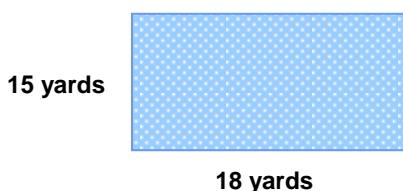
2) 2.4 to 10

3) $4\frac{4}{9}$ to $6\frac{1}{5}$

A) $\frac{72}{31}$ B) $\frac{200}{279}$

C) $\frac{40}{31}$ D) $\frac{279}{200}$

4) Find the ratio of the width to the length of the rectangle shown below.



5) An organization has 800 members who are 50 or older and 1400 members who are younger than 50. What is the ratio of members who are younger than 50 to the total number of members?

Write the sentence as a proportion.

6) 33 children is to 45 bicycles as 11 children is to 15 bicycles.

7) **Determine whether each proportion is a true proportion.**

a) $\frac{20}{28} = \frac{5}{7}$

b) $\frac{27}{24} = \frac{10}{9}$

8) Is the dosage of 0.8 mg of antibiotics per 2 mL of solution equivalent to a dosage of 1.2 mg of antibiotics per 4.8 mL of solution?

Solve each proportion.

9) $\frac{x}{7} = \frac{24}{28}$

10) $\frac{14}{70} = \frac{-9}{y}$

11) $\frac{2}{\frac{2}{9}} = \frac{18}{y}$

A) 162

C) 2

B) $\frac{1}{2}$

D) 4

12) $\frac{-3}{n} = \frac{-0.9}{3.6}$

Solve each problem.

- 13) The ratio of a quarterback's completed to attempted passes is 2 to 5. How many passes did he complete if he attempted 15 passes?
- 14) A bag of fertilizer covers 500 square feet. How bags of fertilizer should be purchased to cover a rectangular lawn that measures 310 feet by 140 feet?
- A) 868 bags B) 869 bags
C) 86 bags D) 87 bags

- 15) The square of a number is 64. Find all such numbers.

Find each square root.

16) $\sqrt{121}$

17) $\sqrt{\frac{1}{81}}$