

Course: MFM2P Gr. 10 AppliedLesson: 2 - 1Unit: Right Triangle TrigonometryTopic: Prerequisite Skills

✦ *homework check:* none✦ *note:* Prerequisite Skills

The main prerequisite skill in trigonometry is the use of proportions (or ratios) and rounding. For example,

a)

$$\frac{3}{7} = \frac{x}{84} \text{ and cross multiply}$$

$$7x = 3 \times 84$$

$$x = \frac{3 \times 84}{7}$$

$$x = 36$$

b)

$$\frac{2.3}{5.9} = \frac{8.3}{x} \text{ and cross multiply}$$

$$2.3x = 8.3 \times 5.9$$

$$x = \frac{8.3 \times 5.9}{2.3}$$

$$x = 21.29130435 \text{ and round to the nearest tenth}$$

$$x = 21.3$$

Rounding can be done to any number of decimal places. For example, round each number to the indicated number of required places:

$$\begin{aligned} a) \quad 12.0356 \quad (2) &= \\ &= 12.04 \end{aligned}$$

$$\begin{aligned} b) \quad 456.995236 \quad (4) &= \\ &= 456.9952 \end{aligned}$$

Simplifying expressions and solving equations with exponents or square root signs can also be an important skill. For example,

a)

$$\begin{aligned}243^2 - 12^2 &= \\ &= 59049 - 144 \\ &= 58905\end{aligned}$$

b)

$$\begin{aligned}x^2 &= 36 \\ x &= \sqrt{36} \\ x &= 6\end{aligned}$$

c)

$$\begin{aligned}10^2 - 5^2 &= x^2 \\ 100 - 25 &= x^2 \\ 75 &= x^2 \\ x &= \sqrt{75} \\ x &= 8.66\end{aligned}$$

✚ **homework assignment: Lesson 2 - 1**

Lesson 2 – 1: prerequisite skills**1. Solve each proportion.**

a) $\frac{x}{5} = \frac{1}{5}$

b) $\frac{x}{3} = \frac{18}{27}$

c) $\frac{12}{42} = \frac{x}{14}$

d) $\frac{4}{35} = \frac{x}{7}$

e) $\frac{10}{12} = \frac{5}{x}$

f) $\frac{11}{x} = \frac{33}{9}$

g) $\frac{2}{5} = \frac{22}{x}$

h) $\frac{24}{15} = \frac{6}{x}$

2. Solve for x. Express each answer as a decimal to the nearest tenth.

a) $\frac{x}{18} = \frac{3}{15}$

b) $\frac{4}{48} = \frac{x}{9}$

c) $\frac{32}{6} = \frac{5}{x}$

d) $\frac{18}{x} = \frac{45}{20}$

e) $\frac{9}{54} = \frac{22}{x}$

f) $\frac{27}{x} = \frac{15}{33}$

g) $\frac{12}{50} = \frac{x}{10}$

h) $\frac{4}{x} = \frac{45}{36}$

3. Round each measure to the nearest whole number.

a) 43.66 =

b) 12.8 =

c) 89.2 =

d) 42.18 =

4. Round to one decimal place.

a) 4.87 =

b) 2.311 =

c) 5.41 =

d) 26.98 =

5. Round to the nearest 4 decimal places.

a) 0.099 67 =

b) 2.346 119 =

c) 3.463 33 =

d) 0.856 349 =

6. Find each square.

a) $22^2 =$

b) $53^2 =$

c) $19^2 =$

d) $1.5^2 =$

7. Find each square root. If necessary, round to one decimal place.

a) $\sqrt{27} =$

b) $\sqrt{169} =$

c) $\sqrt{287} =$

d) $\sqrt{542} =$

8. Evaluate.

a) $3^2 + 6^2 =$

b) $5^2 + 3^2 =$

c) $8^2 - 4^2 =$

d) $13^2 - 12^2 =$

9. Evaluate to the nearest tenth where necessary.

a) $\sqrt{3^2 + 4^2} =$

b) $\sqrt{8^2 + 3^2} =$

c) $\sqrt{11^2 - 8^2} =$

d) $\sqrt{25^2 - 16^2} =$