

Mathematics 10  
1.1-1.3 Assignment

Name: key  
Block: \_\_\_\_\_

1. Which imperial unit would you use to measure each of the following?

- a) the length of a pen inches
- b) the height of a doorway feet
- c) the length of a classroom yards
- d) the distance from Vancouver to Seattle miles

2. Which SI unit would you use to measure each of the following lengths.

- a) the width of a diamond earring mm
- b) the length of a pencil cm
- c) the perimeter of a classroom m
- d) the distance from Burnaby to Whistler km

3. Complete each of the following conversions within the imperial system. Show your work using a conversion factor.

a) 6 ft. = 72 in.

$$6 \text{ ft} \times \frac{12 \text{ in}}{1 \text{ f}} = 72 \text{ in}$$

b) 4 ft. 2 in. = 50 in.

$$4 \text{ ft} \times \frac{12 \text{ in}}{1 \text{ ft}} + 2 \text{ in} = 48 \text{ in} + 2 \text{ in} = 50 \text{ in}$$

c) 65 in. = 5 ft. 5 in.

$$65 \text{ in} \times \frac{1 \text{ ft}}{12 \text{ in}} = \frac{65}{12} \text{ ft} = 5 \frac{5}{12} \text{ ft}$$

d) 18 yd. = 54 ft.

$$18 \text{ yd} \times \frac{3 \text{ ft}}{1 \text{ yd}} = 54 \text{ ft}$$

$$\frac{5 \text{ ft}}{12} \times \frac{12 \text{ in}}{1 \text{ ft}} = 5 \text{ in}$$

e) 25 ft. = 8 yd. 1 ft.

$$25 \text{ ft} \times \frac{1 \text{ yd}}{3 \text{ ft}} = \frac{25}{3} \text{ yd} = 8 \frac{1}{3} \text{ yd}$$

f) 3 mi. = 5280 yd.

$$3 \text{ mi} \times \frac{1760 \text{ yd}}{1 \text{ mi}} = 5280 \text{ yd}$$

$$\frac{1}{3} \text{ yd} \times \frac{3 \text{ ft}}{1 \text{ yd}} = 1 \text{ ft}$$

4. Complete each of the following conversions within the SI system. Show your work using a conversion factor.

a) 35 mm = 3.5 cm

$$35 \text{ mm} \times \frac{1 \text{ cm}}{10 \text{ mm}} = 3.5 \text{ cm}$$

b) 15 m = 1500 cm

$$15 \text{ m} \times \frac{100 \text{ cm}}{1 \text{ m}} = 1500 \text{ cm}$$

$$c) 15 \text{ km} = \underline{15000} \text{ m}$$

$$d) 3.2 \text{ km} = \underline{320000} \text{ cm}$$

$$15 \text{ km} \times \frac{1000 \text{ m}}{1 \text{ km}}$$

$$3.2 \text{ km} \times \frac{100000 \text{ cm}}{1 \text{ km}}$$

$$e) 35000 \text{ m} = \underline{35} \text{ km}$$

$$f) 900 \text{ mm} = \underline{0.0009} \text{ km}$$

$$35000 \text{ m} \times \frac{1 \text{ km}}{1000 \text{ m}}$$

$$900 \text{ mm} \times \frac{1 \text{ km}}{1000000 \text{ mm}}$$

5. Complete each of the following conversions between the Imperial and SI systems. Show your work using a conversion factor. Round to 1 decimal place where appropriate.

$$a) 5 \text{ in.} = \underline{12.7} \text{ cm}$$

$$b) 15 \text{ cm} = \underline{5.9} \text{ in.}$$

$$5 \text{ in} \times \frac{2.54 \text{ cm}}{1 \text{ in}}$$

$$15 \text{ cm} \times \frac{1 \text{ in}}{2.54 \text{ cm}}$$

$$c) 18 \text{ yd.} = \underline{16.5} \text{ m}$$

$$d) 40 \text{ m} = \underline{43.7} \text{ yd.}$$

$$18 \text{ yd} \times \frac{0.9144 \text{ m}}{1 \text{ yd}}$$

$$40 \text{ m} \times \frac{1 \text{ yd}}{0.9144 \text{ m}}$$

$$e) 3 \text{ mi.} = \underline{4.8} \text{ km}$$

$$f) 5 \text{ km} = \underline{3.1} \text{ mi.}$$

$$3 \text{ mi} \times \frac{1.609 \text{ km}}{1 \text{ mi}}$$

$$5 \text{ km} \times \frac{1 \text{ mi}}{1.609 \text{ km}}$$

$$g) 5 \text{ mi.} = \underline{8045} \text{ m}$$

$$h) 6 \text{ km} = \underline{19685.0} \text{ ft.}$$

$$5 \text{ mi} \times \frac{1.609 \text{ km}}{1 \text{ mi}} \times \frac{1000 \text{ m}}{1 \text{ km}}$$

$$6 \text{ km} \times \frac{1000 \text{ m}}{1 \text{ km}} \times \frac{1 \text{ ft}}{0.3048 \text{ m}}$$

6. Bob ran a 10 mile race in Washington State. That same weekend, his friend Jenny ran the Victoria half marathon, which is a 21 km long. Who ran further and by how much? Answer in kilometres.

$$\text{Bob: } 10 \text{ mi} \times \frac{1.609 \text{ km}}{1 \text{ mi}} = 16.09 \text{ km}$$

$$\text{Jenny ran } (21 - 16.09) = 4.91 \text{ km further}$$