

2-9-18

Aim: SWBAT calculate distance using map scale.

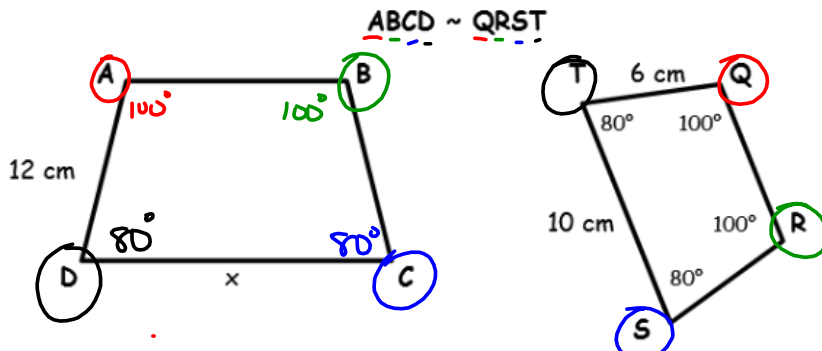
HW: Packet Page 9

Do Now: Packet Page 5

Name \_\_\_\_\_

Date \_\_\_\_\_

Period \_\_\_\_\_

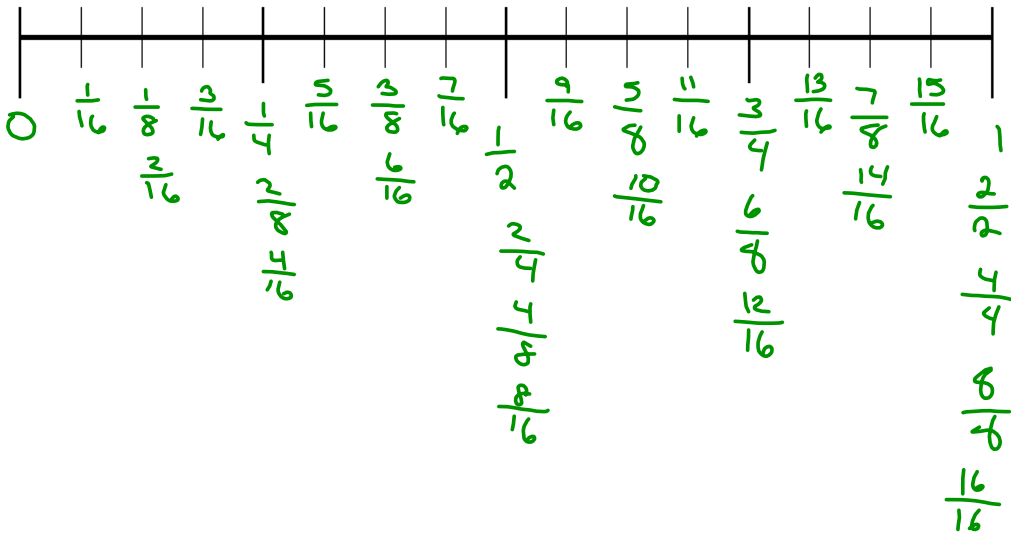


1.  $\angle A$  corresponds to  $\angle Q$
2.  $\angle B$  corresponds to  $\angle R$
3.  $\angle C$  corresponds to  $\angle S$
4.  $\angle D$  corresponds to  $\angle T$
5.  $\overline{AB}$  corresponds to  $\overline{QR}$
6.  $\overline{BC}$  corresponds to  $\overline{RS}$
7.  $\overline{CD}$  corresponds to  $\overline{ST}$
8.  $\overline{AD}$  corresponds to  $\overline{QT}$
9. Find the measure of  $\angle A$ .  $100^\circ$
10. Find  $x$  algebraically.

$$\frac{12}{6} = \frac{x}{10}$$

$$\begin{aligned} \cancel{6}x &= \frac{120}{\cancel{6}} \\ x &= 20 \end{aligned}$$

### Zooming Into 1 Inch



Extra Practice: Use the given map and map scale to answer questions. You will need your ruler!



- 1) Use a proportion to approximate the actual distance between Dallas, TX and Denver, CO.

$$\frac{0.25 \text{ in.}}{85 \text{ mi.}} = \frac{1\frac{1}{4} \text{ in.}}{x \text{ mi.}}$$

$$\frac{0.25x}{0.25} = \frac{106.25}{0.25}$$

$$x = 425 \text{ mi}$$

- 2) Use a proportion to approximate the actual distance between St. Louis, MO and Reno, NV.

$$\frac{0.25 \text{ in.}}{85 \text{ mi}} = \frac{3\frac{1}{8} \text{ in.}}{x \text{ mi}}$$

$$\frac{0.25x}{0.25} = \frac{265.125}{0.25}$$

$$x = 1062.5 \text{ mi}$$

- 3) Use a proportion to approximate the actual distance between Seattle, WA and Buffalo, NY.

$$\frac{0.25 \text{ in.}}{85 \text{ mi}} = \frac{4\frac{1}{4} \text{ in.}}{x \text{ mi}}$$

$$\frac{0.25x}{0.25} = \frac{361.25}{0.25}$$

$$x = 1445 \text{ mi}$$

- 4) You take a flight from Buffalo, NY and have a stopover in St. Louis, MO. You then get on another plane to fly from St. Louis to Seattle, WA. What is the total distance covered in this trip?

$$\frac{0.25 \text{ in.}}{85 \text{ mi}} = \frac{1\frac{3}{8} \text{ in.}}{x \text{ mi}}$$

$$\frac{0.25x}{0.25} = \frac{116.875}{0.25}$$

$$x = 467.5$$

$$\frac{0.25 \text{ in.}}{85 \text{ mi}} = \frac{3\frac{3}{8} \text{ in.}}{y \text{ mi}}$$

$$\frac{0.25y}{0.25} = \frac{286.875}{0.25}$$

$$y = 1147.5$$

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$$467.5 + 1147.5 = 1615 \text{ mi}$$

**AIM:** SWBAT calculate distance using map scale.

**DO NOW:** Solve Algebraically.

If 3 bananas cost 89 cents, how much would a dozen bananas cost?

**Notes.**

**Scale** - gives the **relationship** between the **drawing's** dimensions and the **actual** dimensions.

- The dimensions of a **scale** model are **proportional** to the dimensions of the **actual** object.
- When given a scale you can **set up a proportion** to find missing information.
- REMEMBER to **BE CONSISTENT!!**

**Example:** Strawberry Point, Iowa has a strawberry sculpture that is **15 feet tall**. If the scale of this model is **1 inch to 10 feet**, how tall was the actual strawberry?

Let  $x$  = # of inches

Scale is 1 in. to 10 ft. BE CONSISTENT!  $\left(\frac{\text{in}}{\text{ft}}\right) \frac{1}{10} = \frac{x}{15}$  (cross multiply and solve)

$$\frac{10x}{10} = \frac{15}{10}$$

$$x = 1.5 \text{ in.}$$

You use a scale of **3 inches to 50 feet** to make scale models of buildings. A building's actual height,  $h$ , is given. Find the model's height.

1)  $h = 100$  ft

**You Try!** 2)  $h = 240$  ft

$$\frac{3 \text{ in.}}{50 \text{ ft.}} = \frac{x \text{ in.}}{100 \text{ ft.}}$$

$$\frac{50x}{50} = \frac{300}{50}$$

$$x = 6 \text{ in.}$$

You use a scale of **3 inches to 50 feet** to make scale models of buildings. A model's height,  $h$ , is given. Find the actual building's height.

3)  $h = 18$  in.

**You Try!** 4)  $h = 32$  in.

$$\frac{3 \text{ in.}}{50 \text{ ft.}} = \frac{18 \text{ in.}}{x \text{ ft.}}$$

$$\frac{3x}{3} = \frac{900}{3}$$

$$x = 300 \text{ ft}$$

## HOMEWORK - MAP SCALES

Solve each problem **ALGEBRAICALLY**. Show all work!

1) You are building a model plane. The scale for the model is 1 inch = 125 feet. If the plane is 1,500 feet long, how long would the model be?

2) The distance on a park map between the Merry-go-Round and the Log Flume is 3 inches. The scale was 1 inch = 525 yards. What is the actual distance between the Merry-go-Round and the Log Flume?

3) A dolphin in an aquarium is 12 feet long. A scale model of the dolphin is 3 inches long. What is the scale factor of the model?

4) Danielle is creating a scale drawing of her room. The rectangular room measures  $20\frac{1}{2}$  feet by 25 feet. If her drawing uses the scale 1 inch represents 2 feet of the actual room, will her drawing fit on an  $8\frac{1}{2}$  by 11 inch piece of paper?