

# MAP SCALES

CGCID I - Mr. A. Wittmann

# WHAT IS A SCALE?

- A map represents a portion of the earth's surface.
- An accurate map represents the land, thus each map has a "scale".
- A scale indicates the relationship between a certain distance on the map and the distance on the ground.
- A map scale can be printed in a variety of ways.

# TYPES OF SCALE

- There types of map scales...
  1. Direct Statement
  2. Line Scale
  3. Representative Fraction (RF)

# DIRECT STATEMENT

- Uses words to describe the relationship between a specific distance on a map and a specific distance on the surface of the Earth, for example...

1 cm to 10km

Since 1 cm = 10km

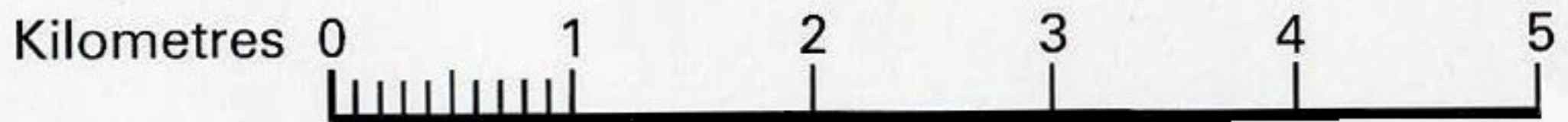
Then  $(3 \times 1)$  cm =  $(3 \times 10)$  Km

Thus 3cm = 30km

# LINE SCALE

- Special kind of a ruler that is divided into units of distance, for example...

**SCALE 1: 100 000**



# REPRESENTATIVE FRACTION (RF)

- A ratio like 1:50,000
- This means 1 of whatever measurement, equals 50,000 of the same units on the actual face of the Earth, for example...

1 cm equals 50,000cm

# SCALE CONVERSIONS QUESTIONS

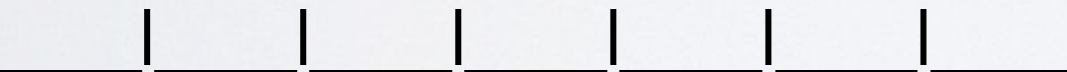
1. Convert these **Representative Fraction** scales to **Direct Statement** scales.

A. 1 : 10,000      1cm to 0.1km

2. Convert these **Direct Statement** scales to **Representative Fraction** scales.

A. 1cm to 6km      1:600,000

3. Convert these **Line** scales to **Direct Statement** scales.

A. 0  42km      1cm to 6km

# SCALE CONVERSIONS ANSWERS

1. Convert these **Representative Fraction** scales to **Direct Statement** scales.

- A. 1 : 10,000    1cm to 0.1km
- B. 1 : 145,000    1cm to 1.45Km
- C. 1 : 350,000    1cm to 3.5km
- D. 1 : 500,000    1cm to 5km
- E. 1 : 6,000    1cm to 0.06km

2. Convert these **Direct Statement** scales to **Representative Fraction** scales.

- A. 1cm to 6km    1:600,000
- B. 1 cm to 75km    1:7,500,000
- C. 1cm to 350km    1:35,000,000
- D. 4cm to 16km    1:400,000
- E. 2cm to 5km    1:250,000



3. Convert these **Line** scales to **Direct Statement** scales.

- A. 0 \_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_ 42km      1cm to 6km
- B. 0 \_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_ 80km      1cm to 26.7km
- C. 0 \_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_ 60km      1cm to 20km
- D. 0 \_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_ 35km      1cm to 5.8km
- E. 0 \_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_ 1244km      1cm to 248.8km

4. Using the map of Canada, inside the cover of the **Making Connections** textbook, state the distance, in km, between...

(1cm to 200km)

- A. Windsor, ON & Owen Sound, ON      km
- B. Thompson, MB & Dawson, YT      km
- C. Saskatoon, AB & Kelowna, BC      km
- D. Kingston, ON & Sherbrooke, QC      km
- E. Deer Lake, ON & Churchill, MB      km

5. Make a scale for a map without a scale.

A. Measure the western border of Saskatchewan on a map **with** a scale.

\_\_\_\_\_5.9\_\_\_\_\_ cm

B. What is the scale on this map? If it is not, convert it to a direct statement scale.

\_\_\_\_\_1\_\_\_\_\_ cm to \_\_\_\_\_200\_\_\_\_\_ km (2.5cm to 500km)

C. Calculate the length of the border in km.

\_\_\_\_\_5.9\_\_\_\_\_ cm X \_\_\_\_\_200\_\_\_\_\_ km = \_\_\_\_\_1180\_\_\_\_\_ km

D. Measure the western border of Saskatchewan on the map **without** a scale.

\_\_\_\_\_3\_\_\_\_\_ cm

E. Take the answer from step D and the answer from step C to determine the scale.

\_\_\_\_\_3\_\_\_\_\_ cm to \_\_\_\_\_1180\_\_\_\_\_ km

F. Reduce this scale to 1cm, thus your map scale is...

\_\_\_\_\_1\_\_\_\_\_ cm to \_\_\_\_\_393.3\_\_\_\_\_ km

**THE END**