

NAME : \_\_\_\_\_

SCALE

\* Scale is a Ratio \*

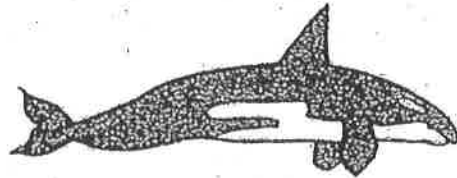
$\frac{1 \text{ cm}}{500 \text{ cm}} = 1 \text{ cm on a drawing equals } 500 \text{ cm in real life. So}$   
 if your drawing is 220 cm long:  $\frac{1}{500} = \frac{220}{?}$

Do Q# 2 (ace),  
 3, 5, 6, 7, 9  
 On Separate Sheet

$\frac{1 (\times 220)}{500 (\times 220)} = \frac{220 \text{ cm}}{110000 \text{ cm}} = \text{In real life its}$   
 $110,000 \text{ cm} = 1,100 \text{ m} = 1.1 \text{ km}$

1. Express as a unit rate.
  - a. \$1.04 for 3 bars of soap
  - b. 21 h of TV watched in 5 d
  - c. 8 m in 5 s
  - d. \$19.50 for 3 h of work
  - e. 230 words in 5 min

6. Use the scale drawing to find the length of a killer whale in metres.



Scale  $\frac{1}{500}$

2. Copy and complete.

a.  $\frac{18 \text{ L}}{200 \text{ km}} = \frac{\square \text{ L}}{100 \text{ km}}$     b.  $\frac{30 \text{ plants}}{10 \text{ cm}^2} = \frac{\square \text{ plants}}{100 \text{ cm}^2}$   
 c.  $\frac{\$5.50}{1 \text{ h}} = \frac{\$16.50}{\square \text{ h}}$     d.  $\frac{3 \text{ cm}}{50 \text{ km}} = \frac{\square \text{ cm}}{250 \text{ km}}$   
 e.  $\frac{\square \text{ km}}{2 \text{ h}} = \frac{570 \text{ km}}{6 \text{ h}}$     f.  $\frac{3 \text{ m}}{12 \text{ min}} = \frac{4 \text{ m}}{\square \text{ min}}$

7. The plans for Chuck's boat have the scale 1 : 5. Is he building an actual boat or a model of a boat? Explain.

8. The driving distance between Dartmouth and Truro is 90 km. The scale on a map of Nova Scotia is 1 cm to 10 km. What would the road distance on the map be in centimetres?

3. An automobile used 4 L of gasoline to travel 48 km.
  - a. How much gasoline would be used to travel 144 km?
  - b. How far could the car travel on 6 L of gasoline?

9. Use the information given on the map to complete the chart.


Distance from Charlottetown to	Distance on map (cm)	Actual distance (km)
Tignish		
Summerside		
Souris East		
Murray Harbour		

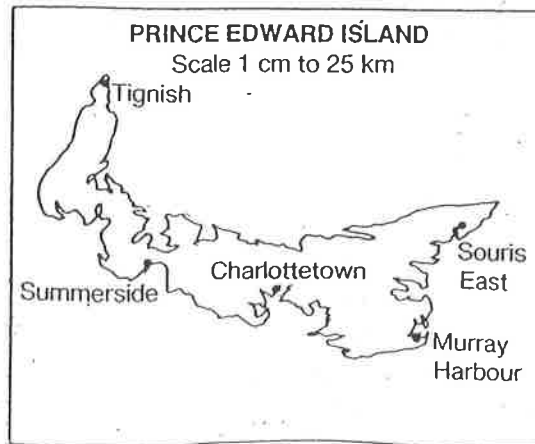
4. Find the heartbeat rate for the activity in beats per minute.

Activity	Heartbeat rate
a. sitting	3 beats in 3 s
b. fast walking	35 beats in 20 s
c. running	30 beats in 10 s

5. Which can of pears is more economical?

a.   
 300 mL  
 \$1.22

b.   
 400 mL  
 \$1.49



# SCALE

NAME: \_\_\_\_\_

Div: \_\_\_\_\_

DATE: \_\_\_\_\_

\* Must be in the same units! \* E.G. Map scale = 1:1,000,000  
 1cm to 25km = 1cm : 2,500,000cm

1cm on the map = 1 million cm on earth

Do Q# 1-18 (Even)

$100\text{cm} = 1\text{m}$

$1000\text{m} = 1\text{km}$

$10\text{mm} = 1\text{cm}$   
 $1000\text{mm} = 1\text{m}$

b) the smallest known starfish, Scale 5:1

**Practice**

Write each scale in 3 other ways.

- Scale 1 cm represents 75 cm.
- Scale 1 cm:50 cm
- Scale 1:1000
- Scale 1 cm to 5 cm

Rewrite each ratio in simplest form.

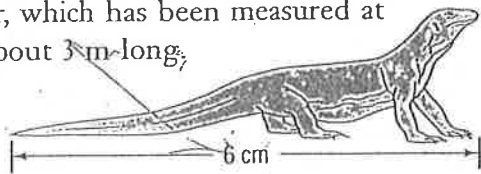
- 3:75
- 10:1000
- 3:900
- 200:10
- 700:350
- 1000:100

Write each scale in simplest form, expressing each term in centimetres.

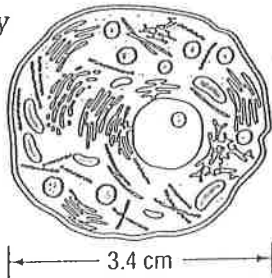
- Scale 1 cm to 25 cm
- Scale 1 cm:100 m
- Scale 150 cm represents 100 mm.

**Problems and Applications**

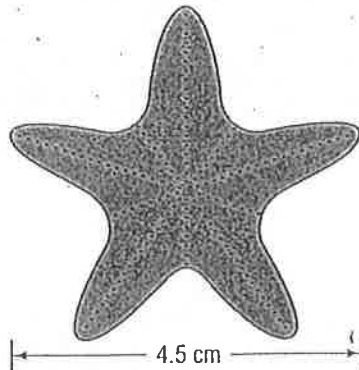
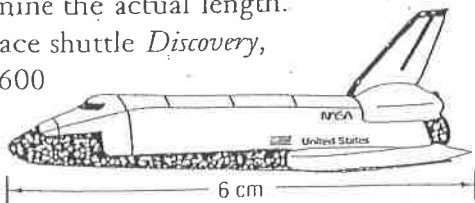
- Use the actual size and the size of the drawing to determine each scale.
  - The world's largest lizard is the Komodo monitor, which has been measured at up to about 3 m long.



- This cell is actually 0.34 mm across.



- Use the scale shown for each drawing to determine the actual length of the space shuttle *Discovery*, Scale 1:600



- Many of the oldest Douglas fir trees are about 105 m high. What is the height of a diagram if the scale is 1:1000?
- Mount Logan in the Yukon is Canada's highest mountain. If the height of a diagram is 5.9 cm, and the scale is 1:100 000, what is the actual height?
- At about 2.6 mm long, the stirrup bone in the ear is the smallest bone in the human body. What is the length of a diagram if the scale is 20:1?
- The length of a diagram of Euglena, a form of freshwater algae, is 2.8 cm. What is the actual length in millimetres if the scale is 100:1?
- Measure the length and width of your desktop. Make a scale drawing and state the scale that you used.
- A photograph taken through a microscope may be labelled as 2000 X.
  - Research the meaning of this notation.
  - How many centimetres wide is a 2000 X photograph of a cell that is 0.1 mm wide?
- With a partner, design your ideal indoor/outdoor home recreation area. You might want to include such features as a dance floor and a swimming pool. Make a scale drawing and indicate the scale. Display your scale drawing and compare it with your classmates'.