

2.4 Monster Trucks!

Focus: calculating perimeter, using scale diagrams

Chapter

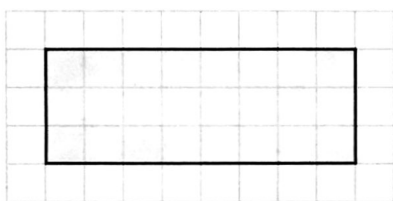
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Warm Up

1. Calculate the HST paid on a purchase of \$31.50.
 _____ % of \$31.50
 = \$ _____

2. Calculate the total cost of the purchase in #1.
 \$31.50 + \$ _____
 = \$ _____

3. Calculate the perimeter of the following figure if one square represents one metre.



Perimeter = _____ m


4. What is the perimeter of the figure in #3 if

a) 1 square represents 2 m?

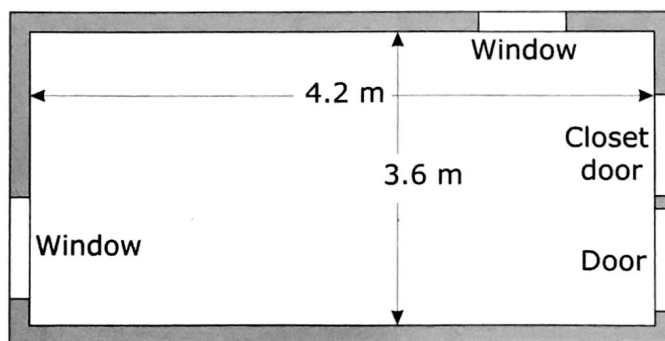
b) 1 square represents 10 m?

c) 1 square represents 0.5 m?

Redecorating

 What does "not to scale" mean?

- A five-year-old boy that you know is getting his bedroom redecorated.
- You have been asked to help with the planning and the purchase of a bright orange, monster truck wallpaper border.
- The diagram of the child's room is not to scale.



1. Calculate the perimeter of the boy's room.

- The closet doorway is approximately 60 cm wide.
- The door to the bedroom is approximately 80 cm wide.
- Each window is approximately 1 m wide.
- The wallpaper border is to be put halfway between the floor and the ceiling. (It will not cross the doors or the windows!)

2. Calculate the distance around the room that needs to be wallpapered.

$$\begin{array}{r} \text{Perimeter} \\ \text{of room} \end{array} - \begin{array}{r} \text{Width of} \\ \text{door} \end{array} - \begin{array}{r} \text{Width of} \\ \text{closet door} \end{array} - \begin{array}{r} \text{Width of} \\ \text{window} \end{array} - \begin{array}{r} \text{Width of} \\ \text{window} \end{array}$$

$$= \begin{array}{r} \text{Distance} \\ \text{to be} \\ \text{wallpapered} \end{array}$$

- The wallpaper border is sold in 4.5-m rolls.
- It sells for \$12.99 per roll.

3. How many rolls of wallpaper need to be purchased?

$$\begin{array}{r} \text{Distance to be} \\ \text{wallpapered} \end{array} \div \begin{array}{r} \text{Distance covered} \\ \text{with 1 roll} \end{array} = \underline{\hspace{2cm}}$$

Number of whole rolls to be purchased = _____

4. a) Calculate the cost of the wallpaper.

b) Calculate the HST to be paid on the purchase.

If you need help calculating tax, look back at page 25.

c) What is the total cost of the purchase after tax?

- The customer has five \$20 bills in her pocket.
5. a) How many bills should she give the cashier?

b) How much change should she receive? _____

c) Draw the combination of bills and/or coins that she might receive in change.

6. To make an accurate scale diagram of the bedroom using a scale of 1 square to 20 cm takes a bit of preparation.

A scale of 1 square to 20 cm is the same as _____ squares to 1 m.

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

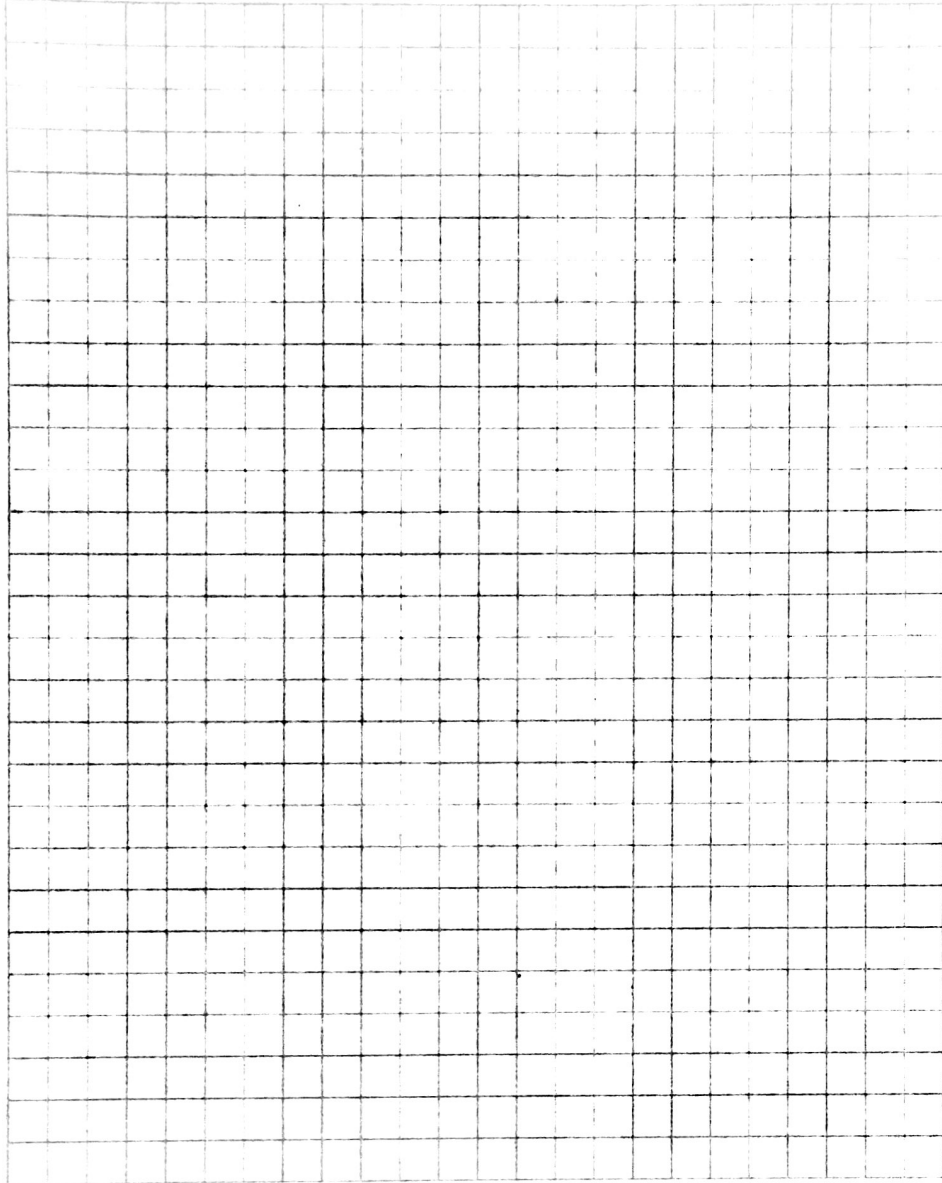
$$100 \text{ cm} = \text{_____} \times 20$$

Assume that the door to the bedroom and each of the windows are located 40 cm from the nearest corner. There is a 20 cm space between the 2 doors. Complete the following table.

Item	Actual Size	Number of Squares Needed on the Diagram
a) Length of room		
b) Width of room		
c) Door to room		
d) Closet door		
e) Each window		
f) Corner to door or window		
g) Space between doors		

Name _____

7. On the following grid, draw an accurate scale drawing in pencil of the bedroom. You may have to turn the page sideways.



✓ Check Your Understanding

How could a scale diagram be useful if you wanted to rearrange the furniture in a bedroom?
