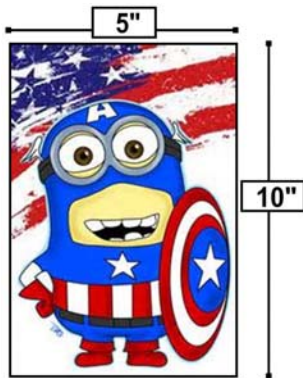


An Investigation in Scale Drawings

How does scale factor affect the area and perimeter of figures?



Investigation I



Ms. Bisal is supporting the Class of 2019 by making a poster of their Spirit Day theme of Captain America mixed with her own personal love of minions. She found this picture on the internet. She is going to blow the picture up using a scale factor of 10.

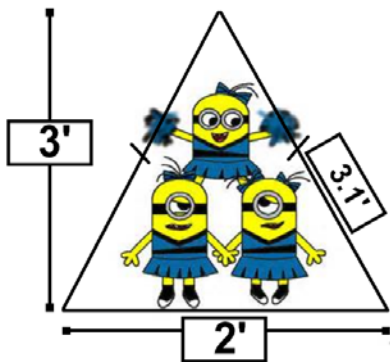
PART A: Fill in the following chart.

	Dimensions	Perimeter	Area
Original Image			
New Image			

PART B: Write the following ratios in simplest form.

Model length: Actual length	Model perimeter: Actual perimeter	Model area: Actual area

Investigation II



Those loveable minions have showed up to a Carey game and are posing as cheerleaders. They formed a pyramid just like the pros. But, oh no! Someone has reversed the shrink ray and set it to a scale factor of 3! The minions have been zapped!

PART A: Fill in the following chart.

	Dimensions	Perimeter	Area
Original Image			
New Image			

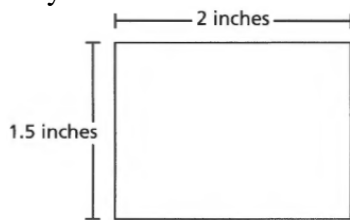
PART B: Write the following ratios in simplest form.

Model length: Actual length	Model perimeter: Actual perimeter	Model area: Actual area

1 **Building on the Essential Question**
 How does scale factor affect the perimeter of a shape?

2 **Building on the Essential Question**
 How does scale factor affect the area of a shape?

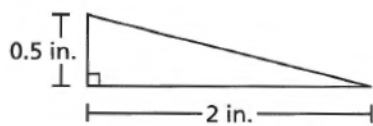
- 3 The drawing below represents a rectangular garden. In the scale drawing, one inch equals 30 yards.



What is the actual area of the garden?

- A 3 sq yd C 210 sq yd
B 90 sq yd D 2,700 sq yd

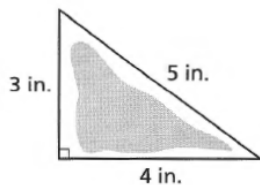
- 4 The scale drawing below represents the side of a ramp. In the scale drawing, one inch equals three feet.



What is the actual area, in square feet, of the side of the ramp?

- A 0.5 C 4.5
B 3 D 9

- 5 The drawing of a road around a lake, shown below, has a scale of 1 inch to 4 kilometers.



What is the total distance, in kilometers, of the actual road?

- A 12 C 48
B 24 D 96

- 6 A scale drawing is to be made of the floor of a rectangular room whose dimensions are 72 feet by 40 feet.

The scale to be used is 1 inch: 8 feet.

What will the perimeter of the scale drawing be in inches?

Show all work.

Answer _____ inches

- 7 A rancher has a scale drawing of a new horse stable. The scale is 1 inch: 3 feet. The drawing shows a rectangular area that is 15 inches by 30 inches.

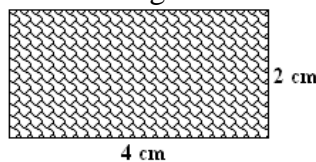
Part A How many feet of fencing will the rancher need for the new stable?

Answer _____ feet

Part B How many square feet of room will the horses have in the new stable?

Answer _____ square feet

- 8 A decorator created a scale drawing (shown below) of a section of a wallpaper pattern. The drawing has a scale of 1 cm: 20 cm.



Part A Find the area of the scale drawing and of the area of the actual section of wallpaper.

Show all work.

Drawing area _____ square cm

Actual area _____ square cm

Part B Find the ratio of the areas.

Answer _____

- 9 A scale of 1 cm: 3 cm is used to draw a reduction of a rectangle. What is the ratio of the perimeters of the rectangles?

Answer _____

- 10 A scale drawing of a mural is 15 inches by 30 inches. The scale of the drawing is 1 in: 4 ft. What is the ratio of the drawing's area to the mural's area?

Answer _____