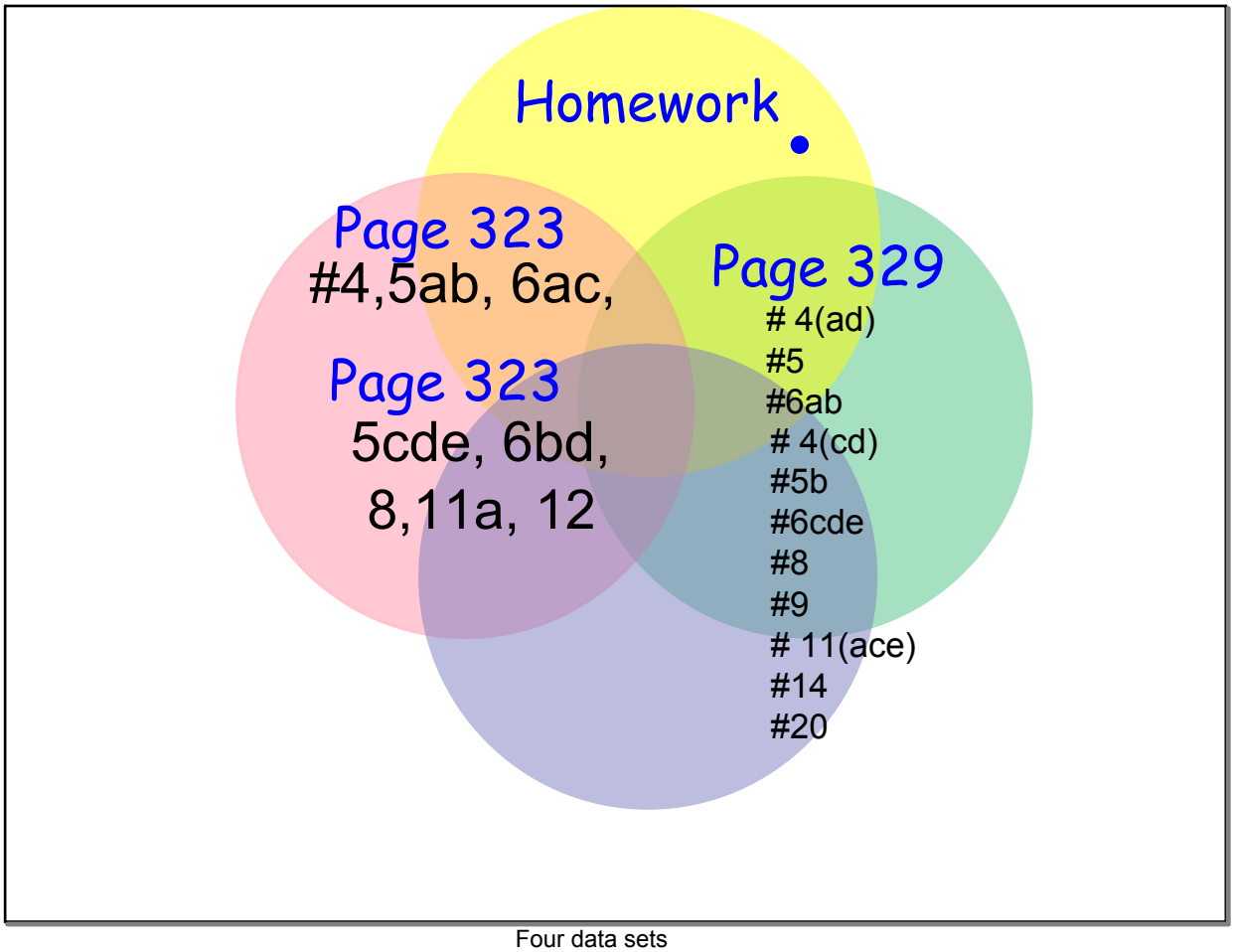
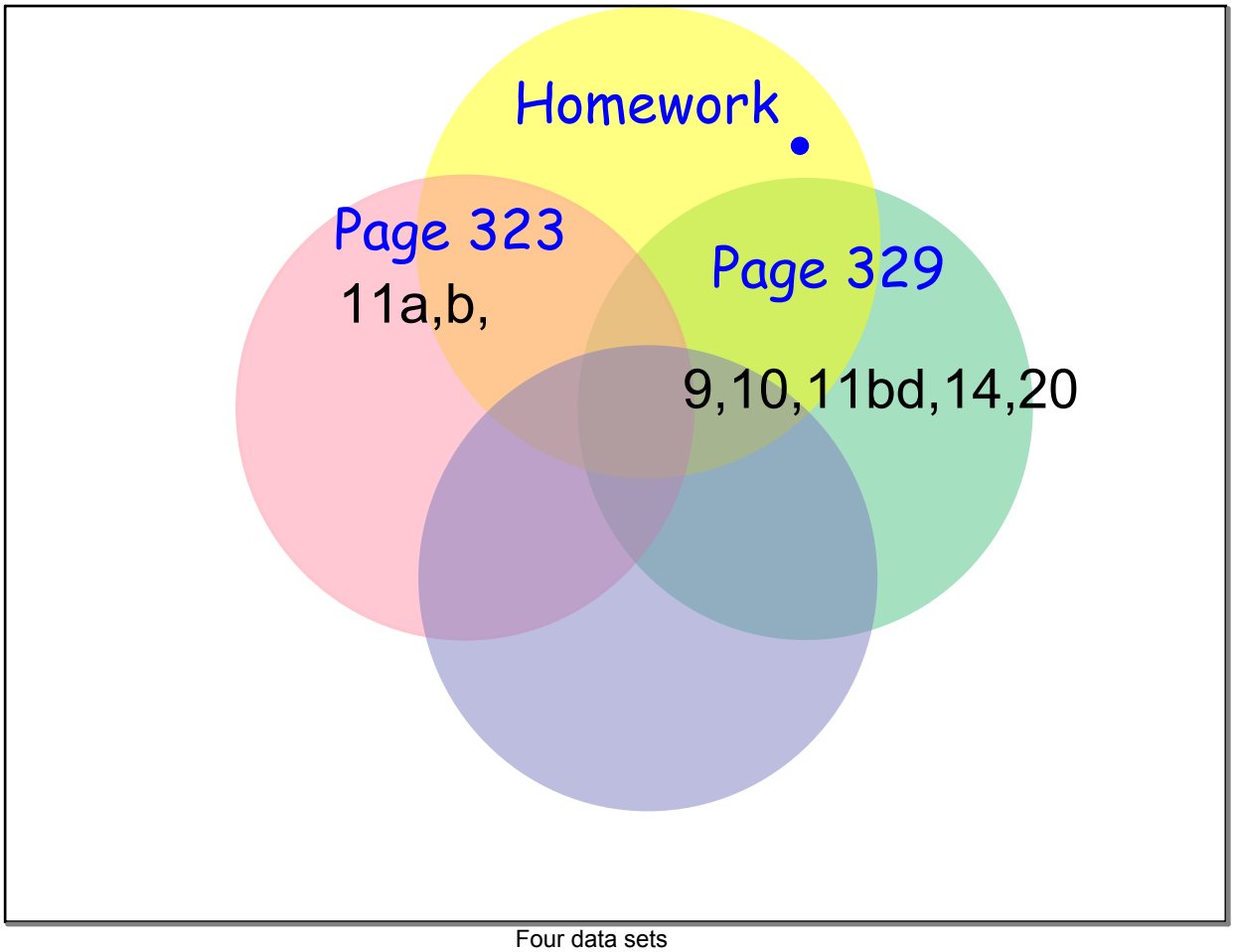


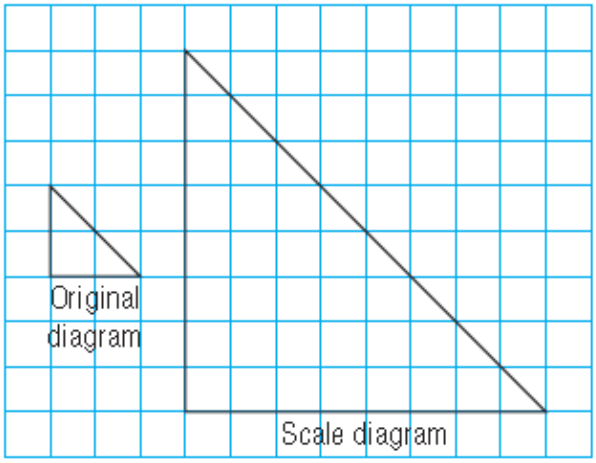
Four data sets



Four data sets

4. Determine the scale factor for each scale diagram.

a)



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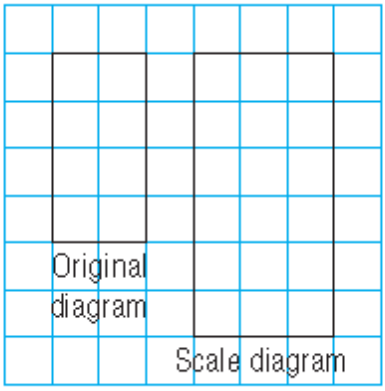
b)



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5. Scale diagrams of different squares are to be drawn. The side length of each original square and the scale factor are given. Determine the side length of each scale diagram.

	Side length of original square	Scale factor	
a)	12 cm	3	
b)	82 mm	$\frac{5}{2}$	
c)	1.55 cm	4.2	
d)	45 mm	3.8	
e)	0.8 cm	12.5	

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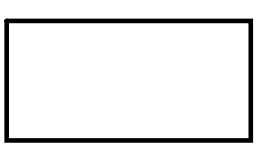
6. A photo of a surfboard has dimensions 17.5 cm by 12.5 cm. Enlargements are to be made with each scale factor below. Determine the dimensions of each enlargement. Round the answers to the nearest centimetre.

a) scale factor 12 **b)** scale factor 20

c) scale factor $\frac{7}{2}$ **d)** scale factor $\frac{17}{4}$



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8. The head of a pin has diameter 2 mm. Determine the scale factor of this photo of the pinhead.

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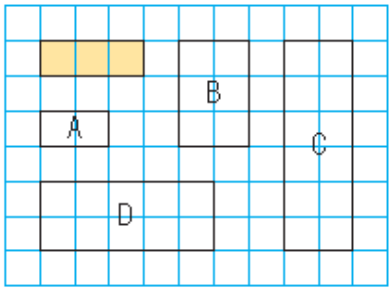
11. Assessment Focus For each set of diagrams below, identify which of diagrams A, B, C, and D are scale diagrams of the shaded shape. For each scale diagram you identify:

i) State the scale factor.

ii) Explain how it is a scale diagram.

a)



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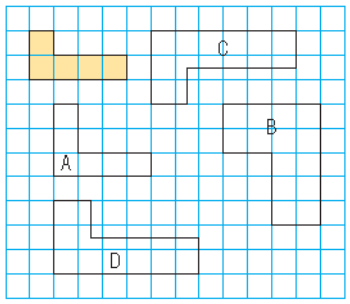
b)



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12. One frame of a film in a projector is about 50 mm high. The film is projected onto a giant screen. The image of the film frame is 16 m high.

a) What is the scale factor of this enlargement?

b) A penguin is 35 mm high on the film. How high is the penguin on the screen?

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4. Write each fraction in simplest form, then express it as a decimal.

a) $\frac{25}{1000}$ b) $\frac{5}{125}$ c) $\frac{2}{1000}$ d) $\frac{3}{180}$

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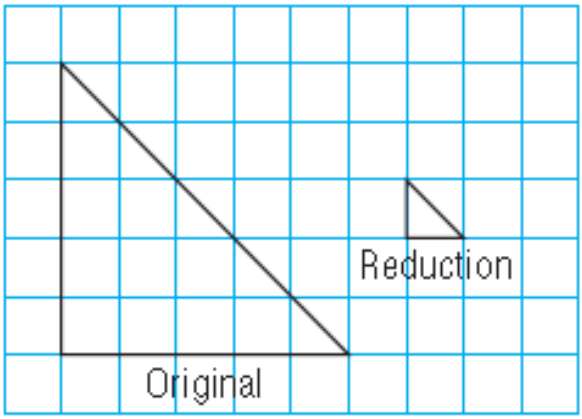
5. Determine the scale factor for each reduction as a fraction or a decimal.

a)



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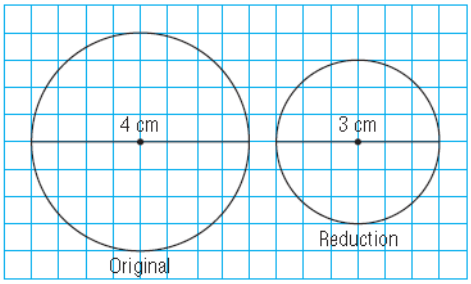
b)



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6. For each pair of circles, the original diameter and the diameter of the reduction are given. Determine each scale factor as a fraction or a decimal.

	Diameter of Actual Circle	Diameter of Reduction	
a)	50 cm	30 cm	
b)	30 cm	20 cm	
c)	126 cm	34 cm	
d)	5 m	2 cm	
e)	4 km	300 m	

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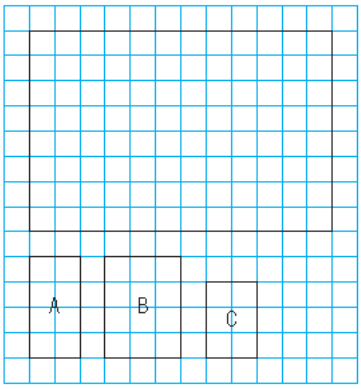
8. Which of rectangles A, B, and C is a reduction of the large rectangle? Justify your answer.



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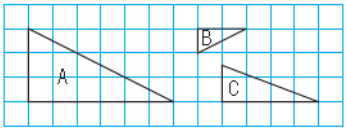
9. Which two polygons have pairs of corresponding lengths that are proportional? Identify the scale factor for the reduction.



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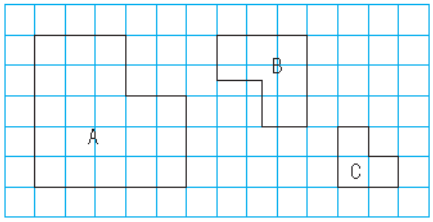
10. Which two polygons have pairs of corresponding lengths that are proportional? Identify the scale factor for the reduction.



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11. A reduction of each object is to be drawn with the given scale factor. Determine the corresponding length in centimetres on the scale diagram.

a) A desk has length 75 cm.
The scale factor is $\frac{1}{3}$.

b) A bicycle has a wheel with diameter about 60 cm. The scale factor is $\frac{3}{50}$.

c) A surfboard has length 200 cm.
The scale factor is 0.05.

d) A sailboat has length 8 m.
The scale factor is 0.02.

e) A canyon has length 12 km.
The scale factor is 0.000 04.

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14. A volleyball court measures approximately 18 m by 9 m. Make a scale drawing of the court using a scale factor of $\frac{1}{200}$. Show any calculations you made.

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20. A 747 jet airplane is about 70 m long. A plastic model of this plane is 28 cm long.

a) Determine the scale factor of the model.

b) On the model, the wingspan is 24 cm. What is the wingspan on the 747 plane?

c) On the model, the tail is 7.6 cm high. What is the height of the tail on the 747 plane?

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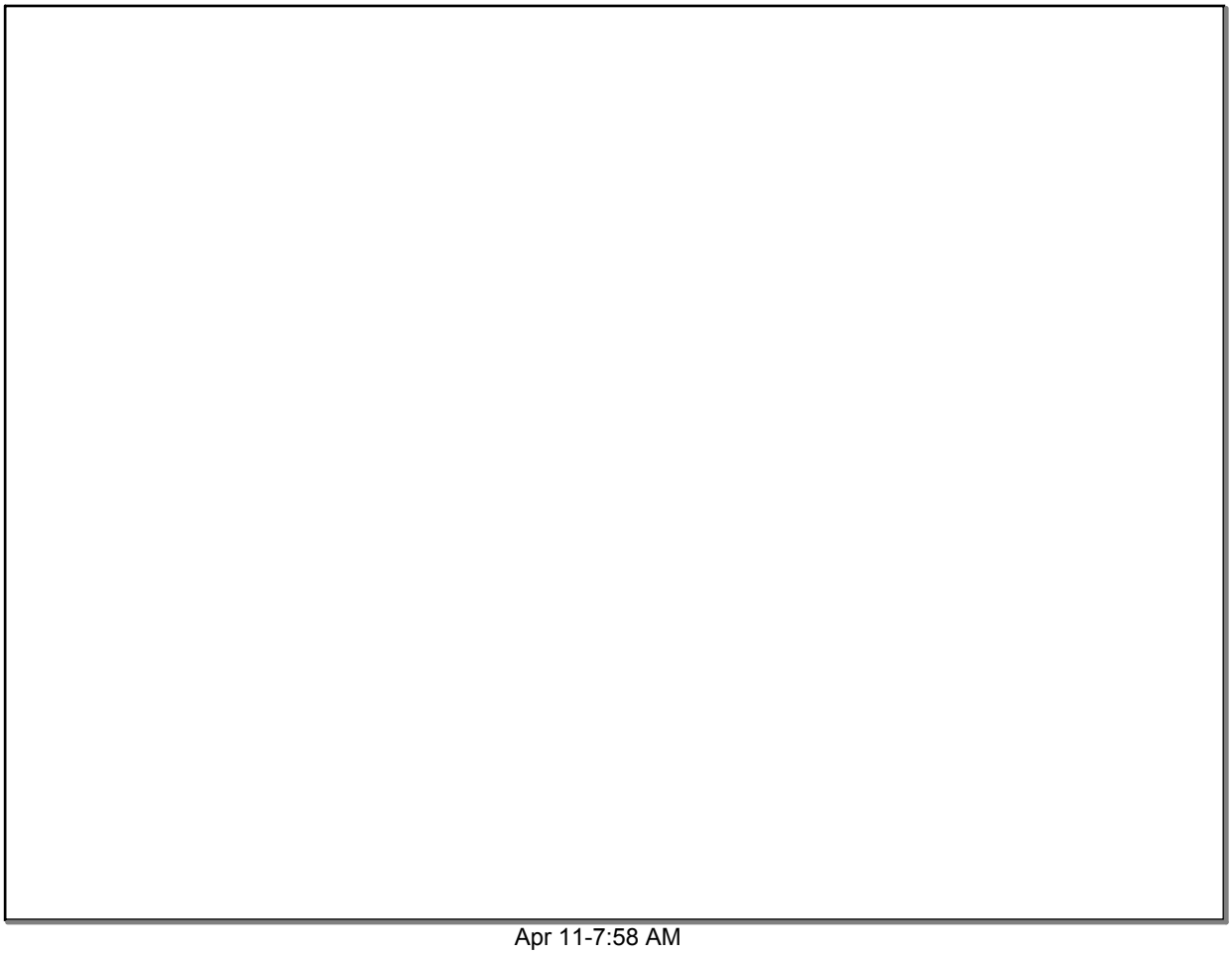

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