

WJEC GCSE MATHS • GRADE 2

MATHS



EXAM QUESTION PACK

ESTIMATING AREA IRREGULAR SHAPES

SCORE

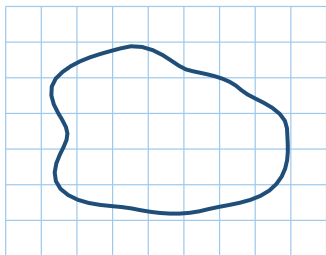
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PERCENTAGE

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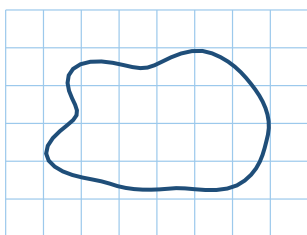
STEMUP

- 1 The diagram shows a flower bed drawn on a grid of squares.
Count the number of whole squares inside the outline.



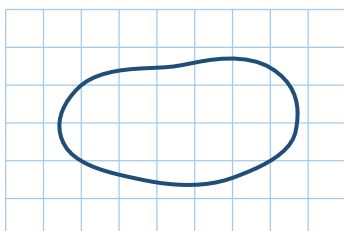
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- 2 The diagram shows a lake drawn on a grid of squares.
Count the number of part squares: the squares that the outline goes through.



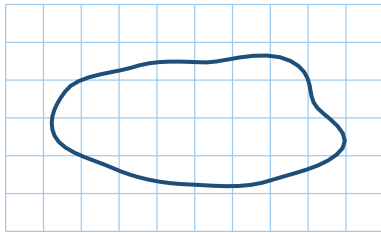
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- 3 The diagram shows an oil spill drawn on a grid of squares.
Shade every whole square inside the outline.
Write down how many squares you have shaded.



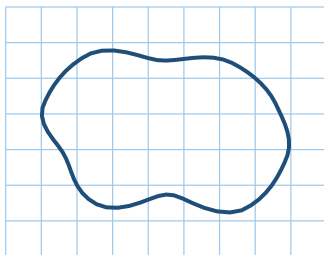
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- 4 The diagram shows a footprint drawn on a grid of squares.
Count the number of whole squares inside the outline.



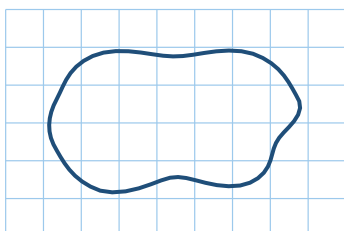
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- 5 The diagram shows a footprint drawn on a grid of squares.
Count the number of part squares: the squares that the outline goes through.



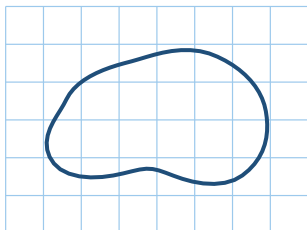
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- 6 The diagram shows a footprint drawn on a grid of squares.
Shade every whole square inside the outline.
Write down how many squares you have shaded.



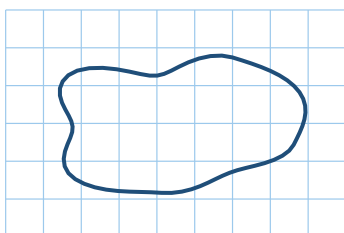
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- 7 The diagram shows a leaf drawn on a grid of squares.
Count the number of whole squares inside the outline.



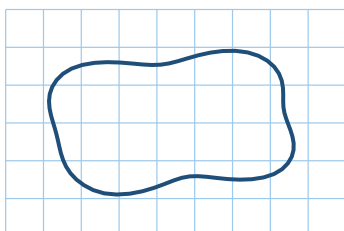
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- 8 The diagram shows an island drawn on a grid of squares.
Count the number of part squares: the squares that the outline goes through.



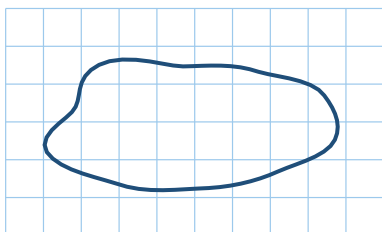
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- 9 The diagram shows a leaf drawn on a grid of squares.
Shade every whole square inside the outline.
Write down how many squares you have shaded.



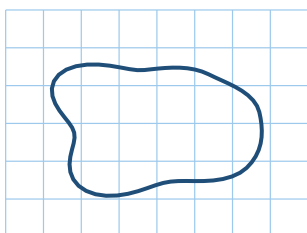
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- 10** The diagram shows an oil spill drawn on a grid of squares.
Count the number of whole squares inside the outline.



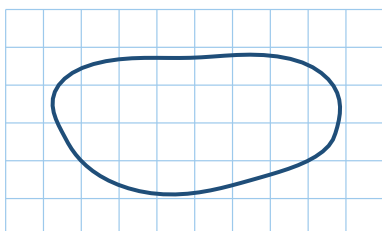
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- 11** The diagram shows a flower bed drawn on a grid of squares.
Count the number of part squares: the squares that the outline goes through.



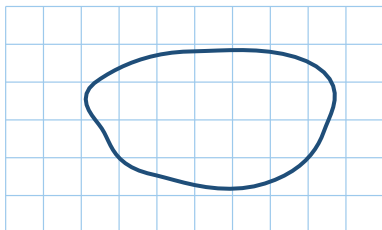
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- 12** The diagram shows a lake drawn on a grid of squares.
Shade every whole square inside the outline.
Write down how many squares you have shaded.



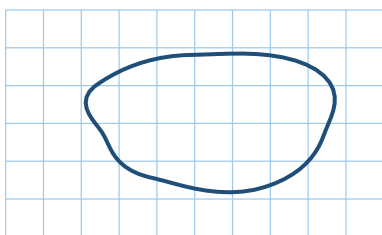
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- 13** The diagram shows a lake drawn on a grid of squares.
Count the number of whole squares inside the outline.



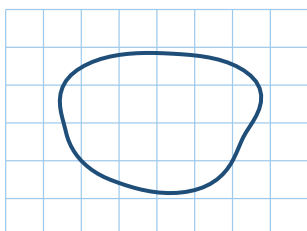
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- 14** The diagram shows an oil spill drawn on a grid of squares.
Count the number of part squares: the squares that the outline goes through.



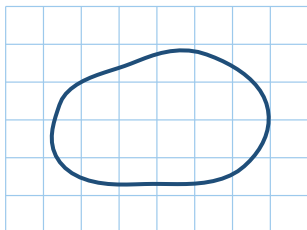
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- 15** The diagram shows a flower bed on a grid.
The side of each square represents 2 m.
Work out the area represented by one square.



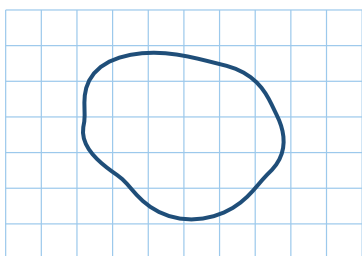
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- 16** The diagram shows a pond drawn on a grid of squares.
Count the number of whole squares inside the outline.



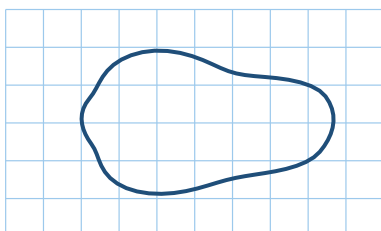
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- 17** The diagram shows a pond drawn on a grid of squares.
Count the number of part squares: the squares that the outline goes through.



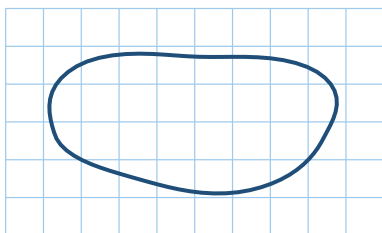
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- 18** The diagram shows a pond drawn on a grid of squares.
Put a cross in every part square.
Write down how many crosses you have drawn.



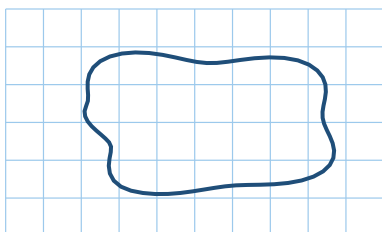
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- 19** The diagram shows an island on a grid.
The side of each square represents 2 km.
Work out the area represented by one square.



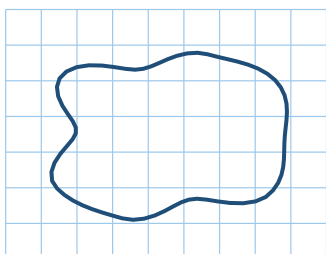
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- 20** The diagram shows a flower bed on a grid.
The side of each square represents 2 m.
Work out a lower estimate for the area of the flower bed.



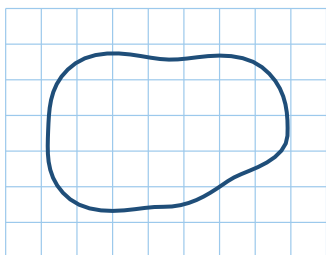
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- 21** The diagram shows an oil spill drawn on a grid of squares.
Put a cross in every part square.
Write down how many crosses you have drawn.



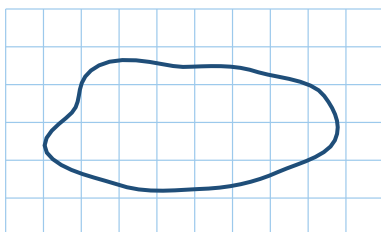
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- 22 The diagram shows a footprint on a grid.
The side of each square represents 2 cm.
Work out the area represented by one square.



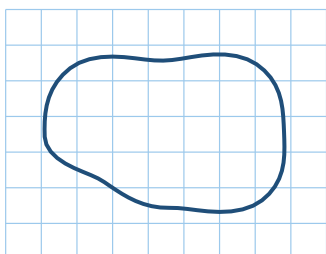
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- 23 The diagram shows a footprint on a grid.
Each square represents an area of 2 cm^2 .
Work out a lower estimate for the area of the footprint.



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- 24 The diagram shows a leaf drawn on a grid of squares.
Put a cross in every part square.
Write down how many crosses you have drawn.

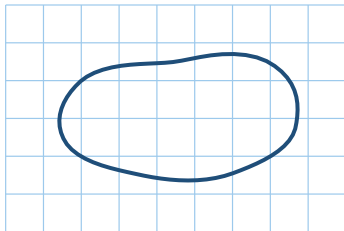


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- 25 An oil spill is drawn on a grid of squares.
27 squares are completely inside the outline and 6 squares are partly inside the outline.
The side of each square represents 3 m.
Work out a lower estimate and an upper estimate for the area.

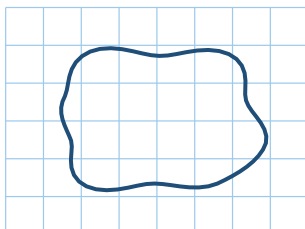
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- 26 The diagram shows an oil spill on a grid.
Each square represents an area of 25 m^2 .
Work out a lower estimate for the area of the oil spill.



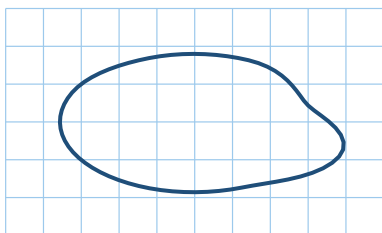
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- 27 The diagram shows a lake drawn on a grid of squares.
Put a cross in every part square.
Write down how many crosses you have drawn.



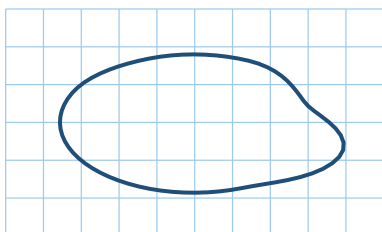
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- 28** The diagram shows a lake on a grid.
Each square represents an area of 25 m^2 .
Work out an upper estimate for the area of the lake.



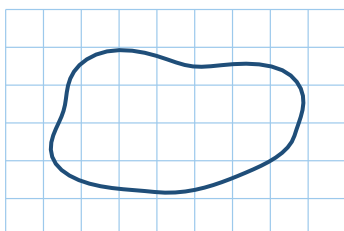
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- 29** The diagram shows a lake on a grid.
The side of each square represents 10 m.
Work out a lower estimate for the area of the lake.



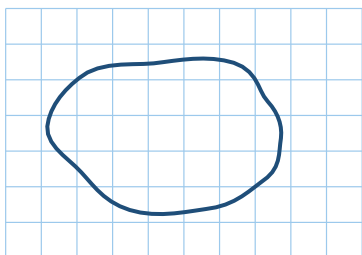
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- 30** The diagram shows a lake drawn on a grid of squares.
Is the area found by counting only the whole squares bigger or smaller than the true area? Give a reason.



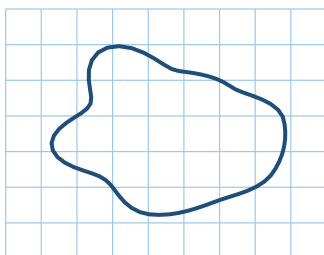
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- 31 The diagram shows an island on a grid.
The side of each square represents 0.5 km.
Work out an upper estimate for the area of the island.



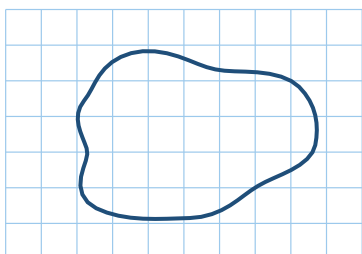
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- 32 The diagram shows a pond on a grid.
Each square represents an area of 1 m^2 .
Work out a lower estimate for the area of the pond.



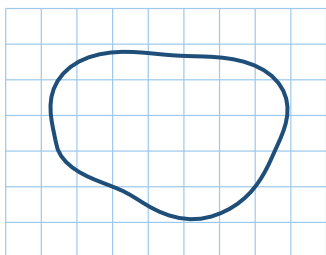
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- 33 The diagram shows a pond drawn on a grid of squares.
The area is found by counting squares.
Give one way to improve the accuracy of the estimate.



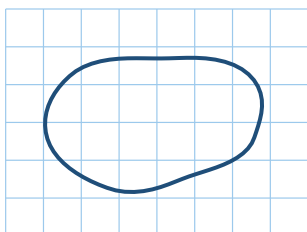
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- 34 The diagram shows a flower bed on a grid.
Each square represents an area of 4 m^2 .
Work out an upper estimate for the area of the flower bed.



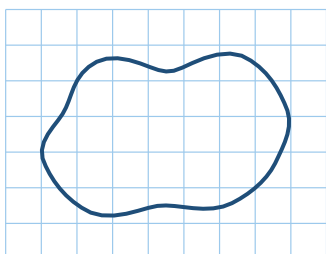
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- 35 The diagram shows an oil spill on a grid.
Each square represents an area of 9 m^2 .
Work out a lower estimate for the area of the oil spill.



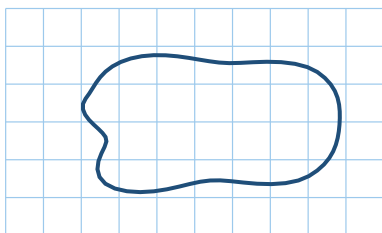
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- 36 The diagram shows a footprint drawn on a grid of squares.
The area is found by counting squares.
Give one way to improve the accuracy of the estimate.



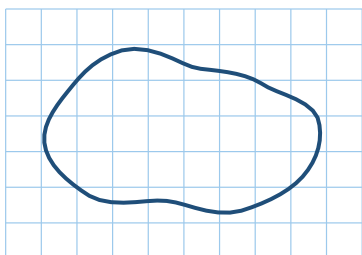
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- 37 The diagram shows a leaf on a grid.
The side of each square represents 0.5 cm.
Work out an upper estimate for the area of the leaf.



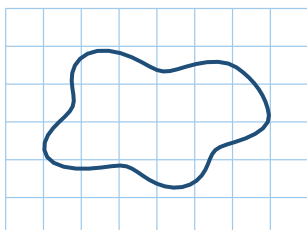
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- 38 The diagram shows a pond on a grid.
The side of each square represents 2 m.
Work out a lower estimate for the area of the pond.



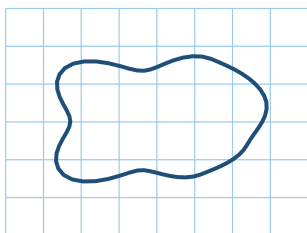
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- 39 The diagram shows a leaf drawn on a grid of squares.
Tom says: "I counted the squares so my answer is exact." Explain why Tom is wrong.



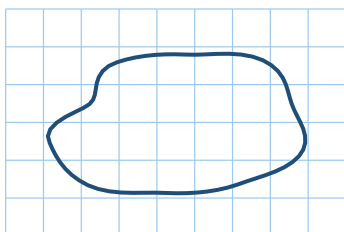
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- 40 The diagram shows a pond on a grid.
Each square represents an area of 1 m^2 .
Work out an upper estimate for the area of the pond.



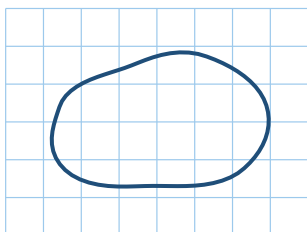
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- 41 The diagram shows a lake on a grid.
The side of each square represents 50 m.
Use the whole squares to work out a lower estimate of the area in m^2 .



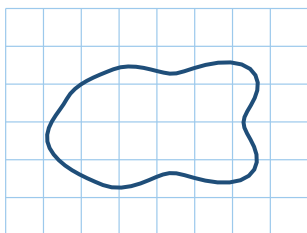
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- 42 The diagram shows a pond drawn on a grid of squares.
Tom says: "I counted the squares so my answer is exact." Explain why Tom is wrong.



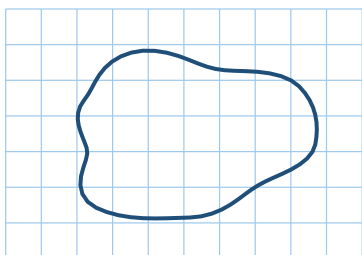
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- 43 The diagram shows a leaf drawn on a grid of squares.
The area is found by counting squares.
How could the estimate be made more accurate?



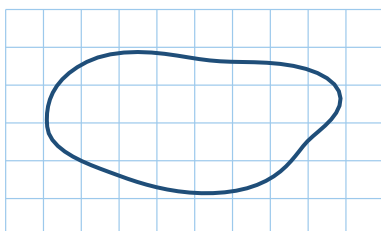
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- 44 The diagram shows a lake on a grid.
The side of each square represents 10 m.
Use the whole squares to work out a lower estimate of the area in m^2 .



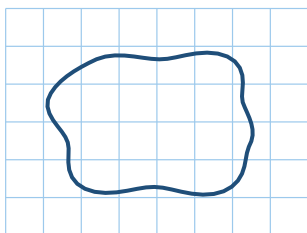
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- 45 The diagram shows an oil spill drawn on a grid of squares.
Is the area found by counting every part square as a whole square bigger or smaller than the true area? Give a reason.



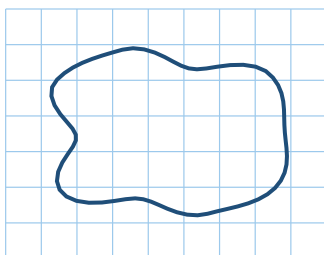
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- 46 The diagram shows a leaf drawn on a grid of squares.
The area is found by counting squares.
Give one way to improve the accuracy of the estimate.



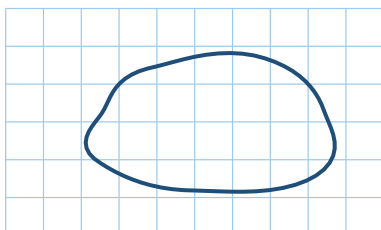
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- 47 The diagram shows an oil spill on a grid.
The side of each square represents 3 m.
Use the whole squares to work out a lower estimate of the area in m^2 .



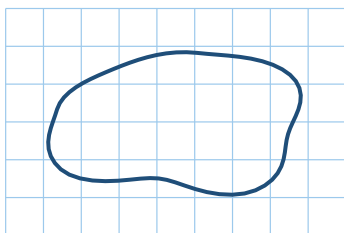
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- 48 The diagram shows an oil spill drawn on a grid of squares.
Tom says: "I counted the squares so my answer is exact." Explain why Tom is wrong.



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- 49 The diagram shows an oil spill drawn on a grid of squares.
The area is found by counting squares.
Give one way to improve the accuracy of the estimate.

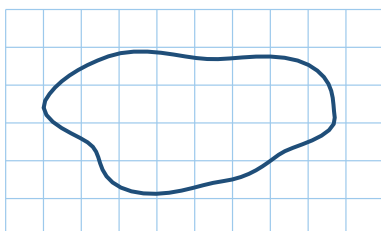


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- 50 An island is drawn on a grid of squares.
16 squares are completely inside the outline and 18 squares are partly inside the outline.
The side of each square represents 2 km.
Write down the range in which the area lies.

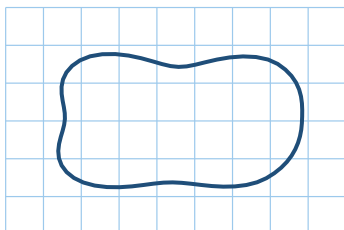
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- 51 The diagram shows a leaf drawn on a grid of squares.
Is the area found by counting every part square as a whole square bigger or smaller than the true area? Give a reason.



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- 52 The diagram shows an oil spill on a grid.
The side of each square represents 3 m.
Work out a lower estimate and an upper estimate for the area.
Write down the range in which the area lies.

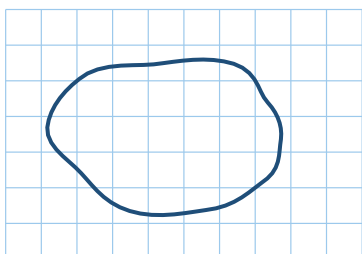


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- 53 An island is drawn on a grid of squares.
17 squares are completely inside the outline and 15 squares are partly inside the outline.
Each square represents an area of 1 km².
Write down the range in which the area lies.

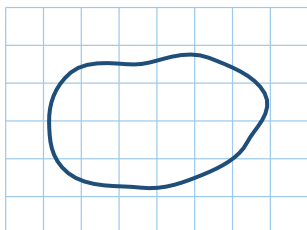
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- 54 The diagram shows a footprint drawn on a grid of squares.
Is the area found by counting every part square as a whole square bigger or smaller than the true area? Give a reason.



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- 55 The diagram shows a leaf on a grid.
The side of each square represents 0.5 cm.
Work out a lower estimate and an upper estimate for the area.
Write down the range in which the area lies.

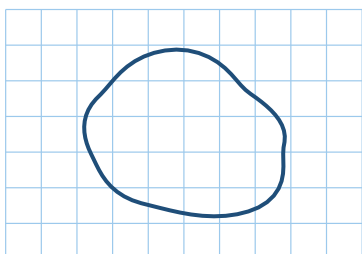


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- 56 A footprint is drawn on a grid of squares.
9 squares are completely inside the outline and 12 squares are partly inside the outline.
The side of each square represents 2 cm.
Write down the range in which the area lies.

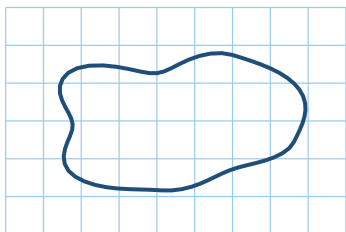
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- 57 The diagram shows a flower bed on a grid.
The side of each square represents 2 m.
Work out an estimate for the area by counting two part squares as one whole square.



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- 58** The diagram shows a leaf on a grid.
The side of each square represents 2 cm.
Work out a lower estimate and an upper estimate for the area.
Write down the range in which the area lies.

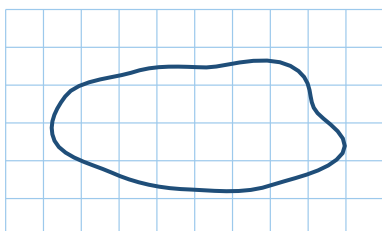


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- 59** A footprint is drawn on a grid of squares.
11 squares are completely inside the outline and 19 squares are partly inside the outline.
Each square represents an area of 4 cm².
Write down the range in which the area lies.

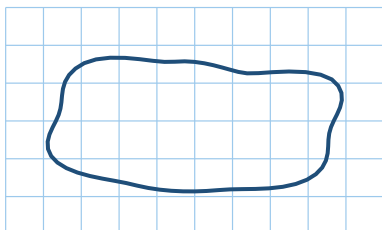
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- 60** The diagram shows a pond on a grid.
The side of each square represents 2 m.
Work out an estimate for the area by counting two part squares as one whole square.



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- 61** The diagram shows an oil spill on a grid.
Each square represents an area of 9 m^2 .
Work out a lower estimate and an upper estimate for the area.
Write down the range in which the area lies.

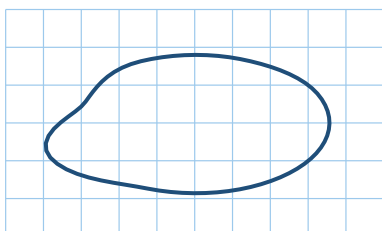


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- 62** A footprint is drawn on a grid of squares.
16 squares are completely inside the outline and 16 squares are partly inside the outline.
The side of each square represents 2 cm.
Write down the range in which the area lies.

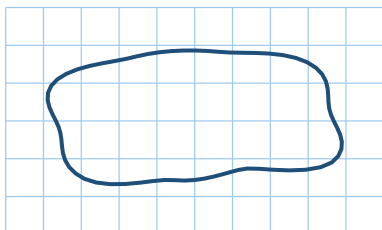
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- 63** The diagram shows an oil spill on a grid.
The side of each square represents 3 m.
Work out an estimate for the area by counting two part squares as one whole square.



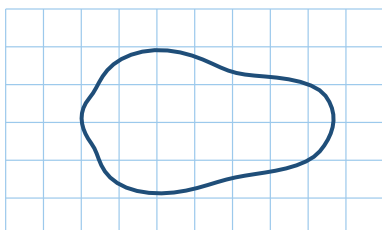
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- 64** The diagram shows a flower bed on a grid.
Each square represents an area of 1 m^2 .
Work out a lower estimate and an upper estimate for the area.
Write down the range in which the area lies.



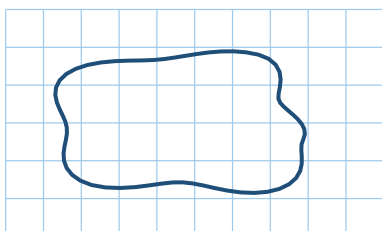
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- 65** The diagram shows a flower bed on a grid.
The side of each square represents 2 m.
Work out the difference between the upper estimate and the lower estimate of the area.



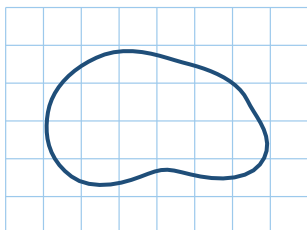
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- 66** The diagram shows an oil spill on a grid.
Each square represents an area of 25 m^2 .
Work out an estimate for the area by counting two part squares as one whole square.



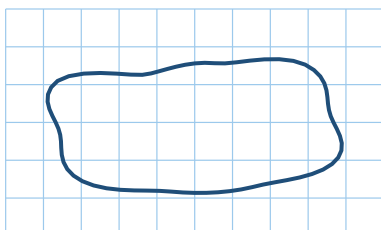
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 / 2

- 67** The diagram shows an island on a grid.
Each square represents an area of 1 km^2 .
Work out a lower estimate and an upper estimate for the area.
Write down the range in which the area lies.



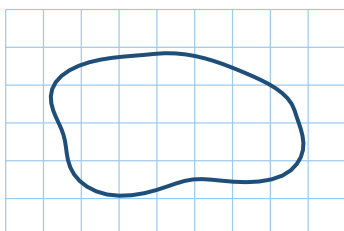
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- 68** The diagram shows a leaf on a grid.
The side of each square represents 2 cm.
Work out the difference between the upper estimate and the lower estimate of the area.



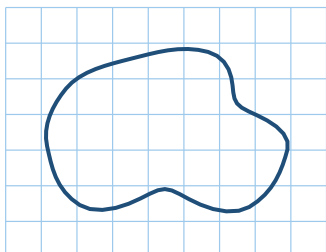
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- 69** The diagram shows a lake on a grid.
Each square represents an area of 100 m^2 .
Work out an estimate for the area by counting two part squares as one whole square.



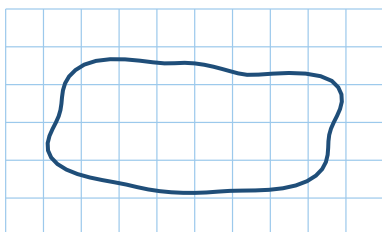
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 / 2

- 70** The diagram shows an island on a grid.
The side of each square represents 2 km.
Work out a lower estimate and an upper estimate for the area.
Write down the range in which the area lies.



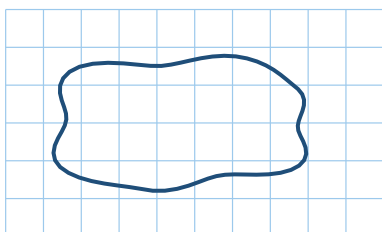
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- 71** The diagram shows an oil spill on a grid.
Each square represents an area of 25 m².
Work out the difference between the upper estimate and the lower estimate of the area.



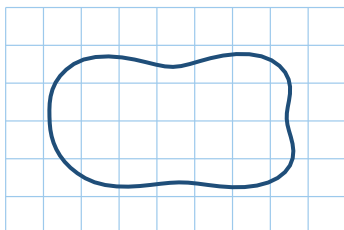
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 / 2

- 72** The diagram shows a pond on a grid.
Each square represents an area of 4 m².
(a) Work out the area of the whole grid (the rectangle) in m².
(b) Explain why the area of the pond must be less than your answer to part (a).



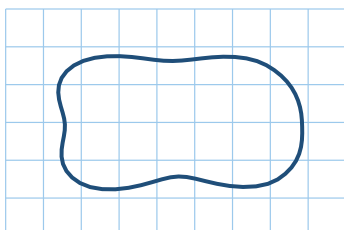
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- 73 The diagram shows a leaf on a grid.
Each square represents an area of 1 cm^2 .
Work out a lower estimate and an upper estimate for the area.
Write down the range in which the area lies.



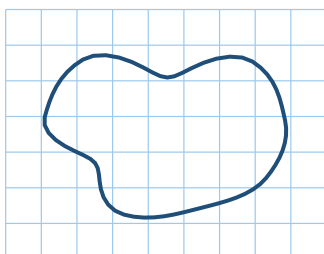
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- 74 The diagram shows a leaf on a grid.
The side of each square represents 0.5 cm .
Work out the difference between the upper estimate and the lower estimate of the area.



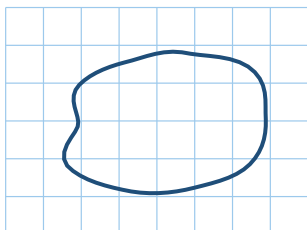
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- 75 The diagram shows an oil spill on a grid.
The side of each square represents 3 m .
(a) Work out the area of the whole grid (the rectangle) in m^2 .
(b) Explain why the area of the oil spill must be less than your answer to part (a).



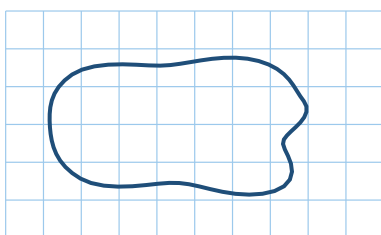
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- 76** The diagram shows an oil spill on a grid.
The side of each square represents 3 m.
Estimate the area. Count a part square as a whole square if more than half of it is inside the outline, and ignore it if less than half.



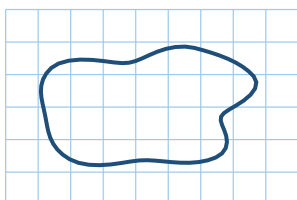
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- 77** The diagram shows a pond on a grid.
Each square represents an area of 1 m^2 .
(a) Work out the area of the whole grid (the rectangle) in m^2 .
(b) Explain why the area of the pond must be less than your answer to part (a).



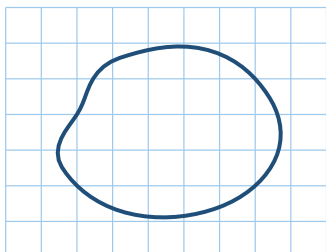
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- 78** The diagram shows a lawn on a grid.
Each square represents an area of 1 m^2 .
Count two part squares as one whole square.
Grass seed costs £2 for each m^2 . Estimate the cost of seed for the whole lawn.



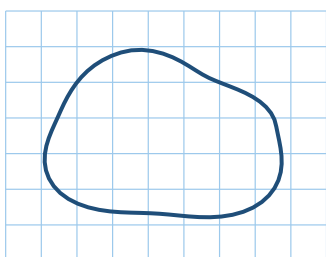
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- 79** The diagram shows an island on a grid.
Each square represents an area of 4 km^2 .
Estimate the area. Count a part square as a whole square if more than half of it is inside the outline, and ignore it if less than half.



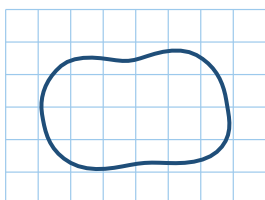
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- 80** The diagram shows a flower bed on a grid.
Each square represents an area of 1 m^2 .
(a) Work out the area of the whole grid (the rectangle) in m^2 .
(b) Explain why the area of the flower bed must be less than your answer to part (a).



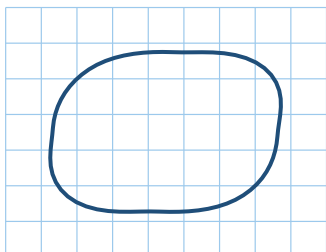
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- 81** The diagram shows a patio on a grid.
Each square represents an area of 1 m^2 .
Count two part squares as one whole square.
Paving costs $\text{£}30$ per m^2 . Estimate the cost of paving the whole patio.



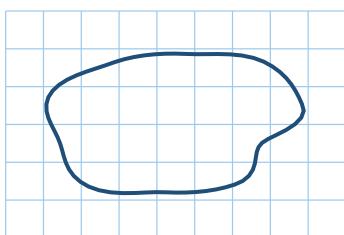
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- 82** The diagram shows a leaf on a grid.
Each square represents an area of 1 cm^2 .
Estimate the area. Count a part square as a whole square if more than half of it is inside the outline, and ignore it if less than half.



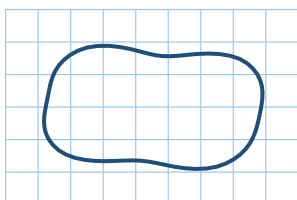
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- 83** The diagram shows a pond on a grid.
The side of each square represents 0.5 m .
(a) Work out the area of the whole grid (the rectangle) in m^2 .
(b) Explain why the area of the pond must be less than your answer to part (a).



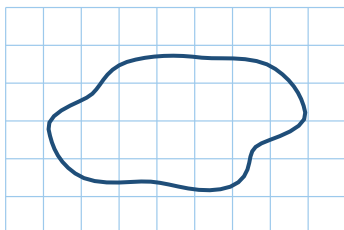
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- 84** The diagram shows a flower bed on a grid.
Each square represents an area of 1 m^2 .
Count a part square only if more than half of it is inside the outline.
Compost costs $\text{£}2.50$ per m^2 . Estimate the cost of compost for the whole bed.



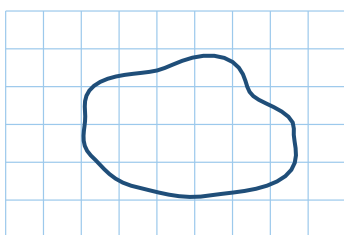
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- 85** The diagram shows a lake on a grid.
The side of each square represents 50 m.
Estimate the area. Count a part square as a whole square if more than half of it is inside the outline, and ignore it if less than half.



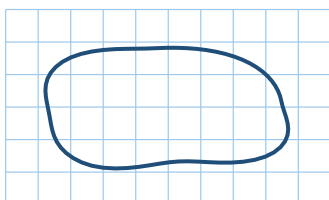
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- 86** The diagram shows a pond on a grid.
The side of each square represents 2 m.
(a) Work out the area of the whole grid (the rectangle) in m^2 .
(b) Explain why the area of the pond must be less than your answer to part (a).



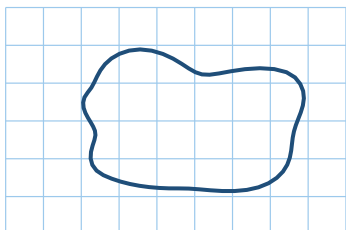
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- 87** The diagram shows a field on a grid.
The side of each square represents 10 m.
Count a part square only if more than half of it is inside the outline.
Fertiliser costs £1.50 per m^2 . Estimate the cost of fertiliser for the whole field.



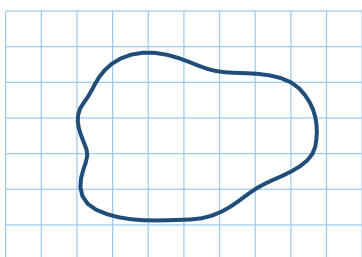
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- 88** The diagram shows an island on a grid.
The side of each square represents 0.5 km.
Estimate the area. Count a part square as a whole square if more than half of it is inside the outline, and ignore it if less than half.



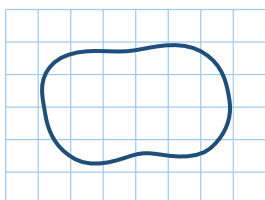
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- 89** The diagram shows an oil spill on a grid.
Each square represents an area of 25 m².
(a) Work out the area of the whole grid (the rectangle) in m².
(b) Explain why the area of the oil spill must be less than your answer to part (a).



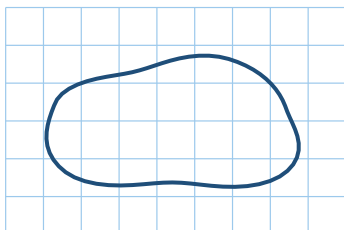
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- 90** The diagram shows a field on a grid.
The side of each square represents 10 m.
Count two part squares as one whole square.
Fertiliser costs £0.50 per m². Estimate the cost of fertiliser for the whole field.



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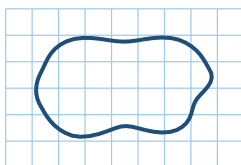
- 91** The diagram shows a footprint on a grid.
Each square represents an area of 4 cm^2 .
Estimate the area. Count a part square as a whole square if more than half of it is inside the outline, and ignore it if less than half.



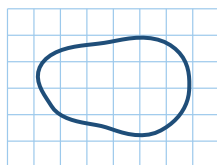
/ 3

- 92** The diagram shows two shapes on grids of squares.
Each square represents an area of 1 km^2 .
Which shape has the greater area? Estimate each area by counting two part squares as one whole square.
You must show your working.

Shape A

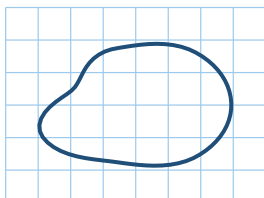


Shape B



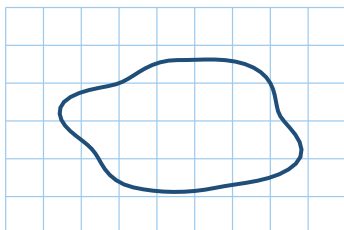
/ 3

- 93** The diagram shows a lawn on a grid.
Each square represents an area of 4 m^2 .
Count a part square only if more than half of it is inside the outline.
Grass seed costs £2.50 for each m^2 . Estimate the cost of seed for the whole lawn.



/ 3

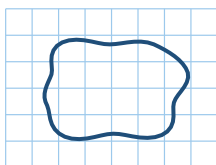
- 94** The diagram shows an island on a grid.
Each square represents an area of 1 km^2 .
Estimate the area. Count a part square as a whole square if more than half of it is inside the outline, and ignore it if less than half.



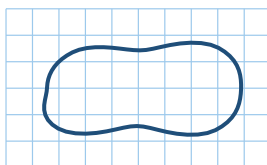
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- 95** The diagram shows two shapes on grids of squares.
The side of each square represents 2 km.
Which shape has the greater area? Estimate each area by counting two part squares as one whole square.
You must show your working.

Shape A

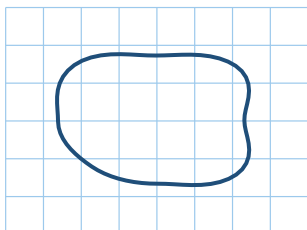


Shape B



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 / 3

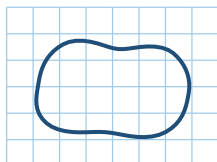
- 96** The diagram shows a lake on a grid.
Each square represents an area of 25 m^2 .
Estimate the area. Count a part square as a whole square if more than half of it is inside the outline, and ignore it if less than half.



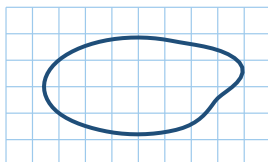
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- 97** The diagram shows two shapes on grids of squares.
Each square represents an area of 100 m^2 .
Which shape has the greater area? Estimate each area by counting two part squares as one whole square.
You must show your working.

Shape A



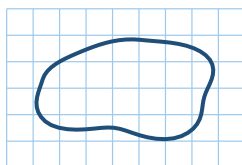
Shape B



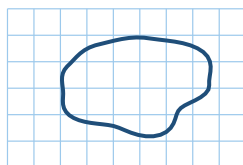
/ 3

- 98** The diagram shows two shapes on grids of squares.
The side of each square represents 2 cm.
Which shape has the greater area? Estimate each area by counting two part squares as one whole square.
You must show your working.

Shape A



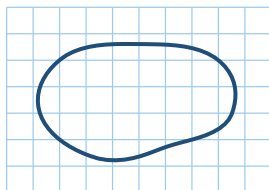
Shape B



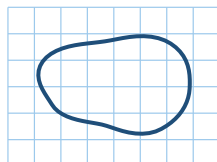
/ 3

- 99** The diagram shows two shapes on grids of squares.
The side of each square represents 0.5 cm.
Which shape has the greater area? Estimate each area by counting two part squares as one whole square.
You must show your working.

Shape A



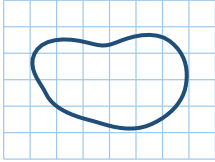
Shape B



/ 3

- 100** The diagram shows two shapes on grids of squares.
Each square represents an area of 1 m^2 .
Which shape has the greater area? Estimate each area by counting two part squares as one whole square.
You must show your working.

Shape A



Shape B

