High School
Mathematics Test 2015

Year 7

Perimeter

Non Calculator Section

Name_____

Skills and Knowledge Assessed:

- Find perimeters and areas of parallelograms, trapeziums, rhombuses and kites (ACMMG196)
- Investigate the relationship between features of circles such as circumference, area, radius and diameter. Use formulas to solve problems involving circumference and area (ACMMG197)

Answer all questions in the spaces provided on this test paper by:

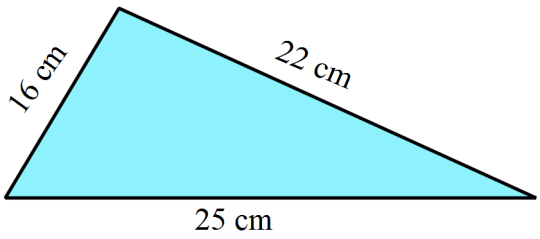
Writing the answer in the box provided.

or

Shading in the bubble for the correct answer from the four choices provided.

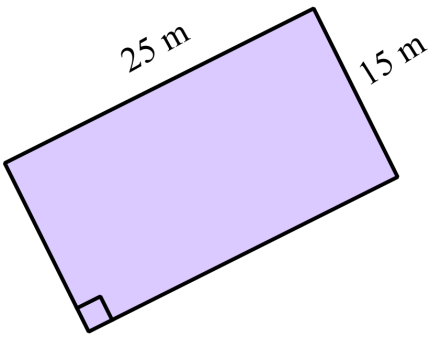
Show any working out on the test paper. Calculators are **not** allowed.

1. What is the perimeter of the triangle shown?



- ▭ 41 cm
- ▭ 47 cm
- ▭ 63 cm
- ▭ 352 cm

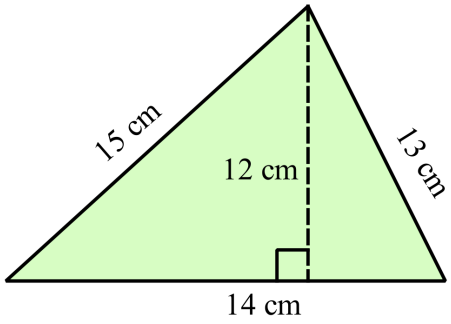
2. What is the perimeter of this rectangle?



3. What is the perimeter of a square which has sides 15 cm?

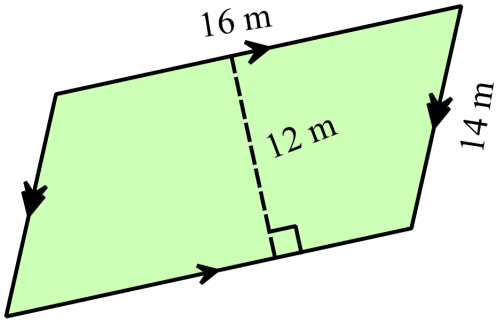
4. Find the perimeter of this triangle.

- ☐ 40 cm
- ☐ 41 cm
- ☐ 42 cm
- ☐ 54 cm



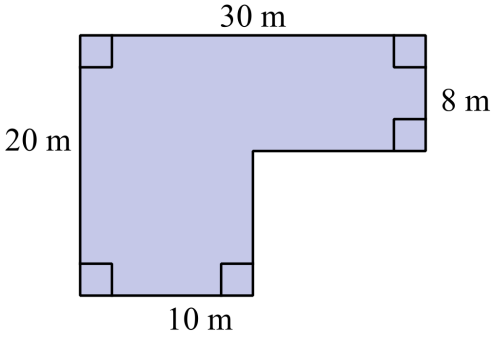
5. What is the perimeter of the parallelogram shown?

- ☐ 42 m
- ☐ 60 m
- ☐ 72 m
- ☐ 84 m

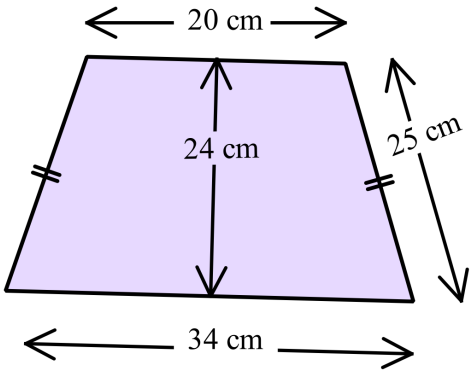


6. What is the perimeter of this shape?

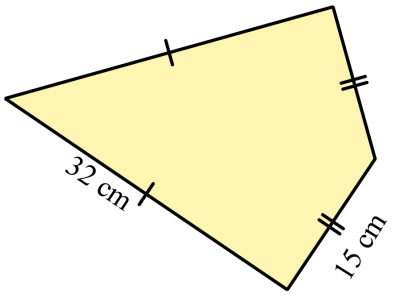
- ☐ 68 m
- ☐ 80 m
- ☐ 88 m
- ☐ 100 m



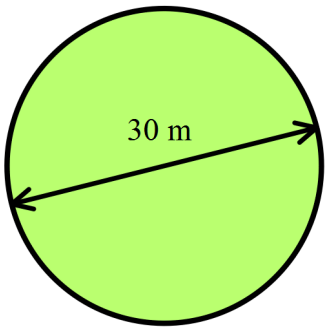
7. What is the perimeter of the trapezium?



8. What is the perimeter of the kite?

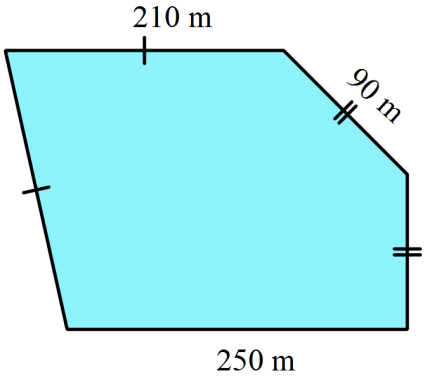


9. The circle has a diameter of 30 m.
What is its circumference?



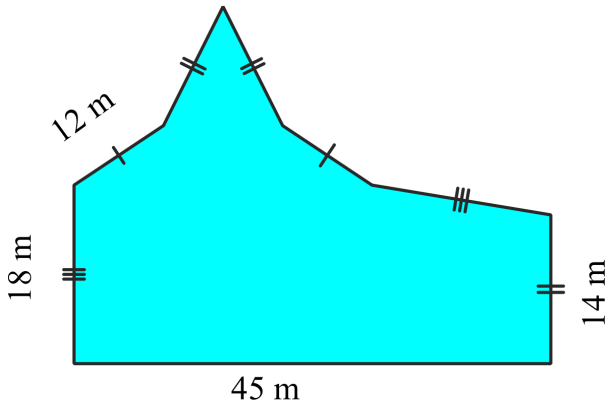
- ☐ 15π m
- ☐ 30π m
- ☐ 60π m
- ☐ 90π m

10. Find the perimeter of the irregular pentagon.



- ☐ 550 m
- ☐ 640 m
- ☐ 760 m
- ☐ 850 m

11. What is the perimeter of the polygon shown?

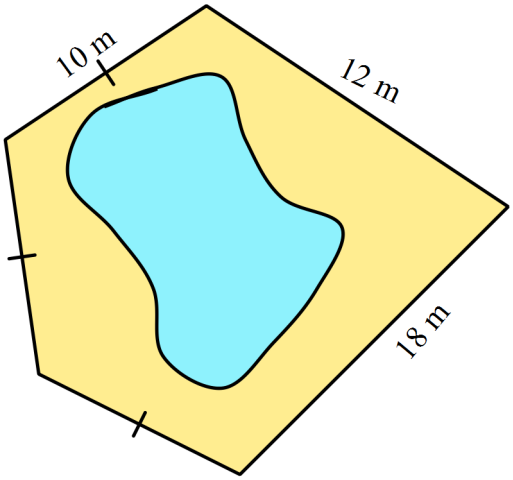


- ☐ 147 m
- ☐ 159 m
- ☐ 161 m
- ☐ 165 m

12. A pool yard has the dimensions shown.

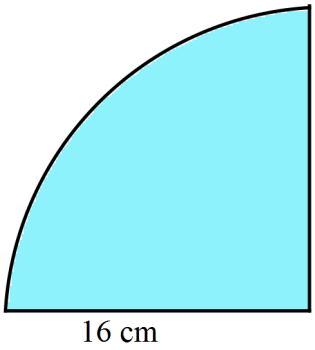
The field is fenced with metal fencing that costs $50 per metre.

What is the cost of fencing the yard?



13. A quadrant of a circle is shown.

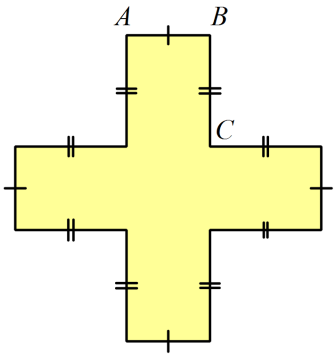
What is its perimeter in terms of π ?



14. The distance *BC* is 12 cm.

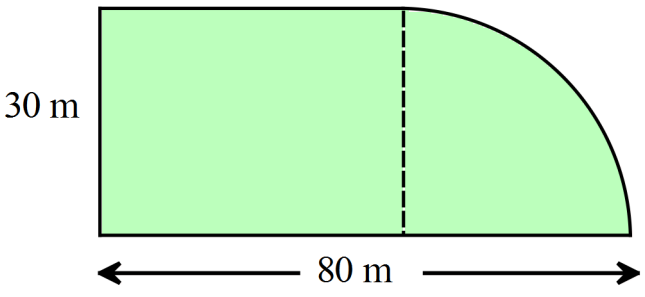
The perimeter of this shape is 132 cm.

What is the distance AB?



15. Find the perimeter of the shape shown below in terms of π .

- ☐ $15\pi + 160$ m
- ☐ $15\pi + 190$ m
- ☐ $30\pi + 160$ m
- ☐ $30\pi + 190$ m



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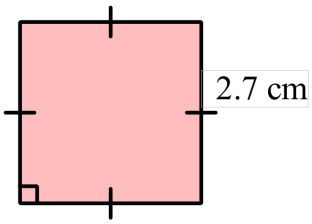
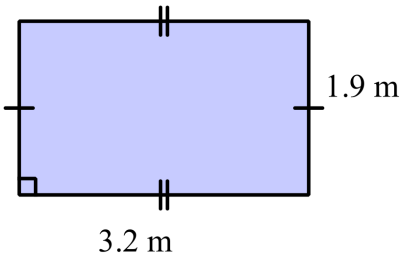
1. What is the perimeter of the square shown?

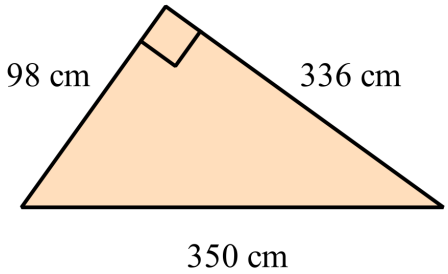


2. Find the perimeter of this rectangle.



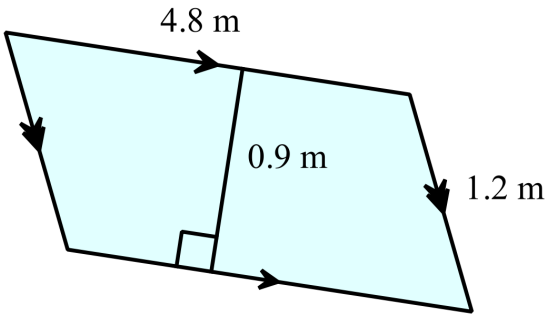
3. What is the perimeter of the triangle?

- ☐ 784 cm
- ☐ 882 cm
- ☐ 1 568 cm
- ☐ 16 464 cm



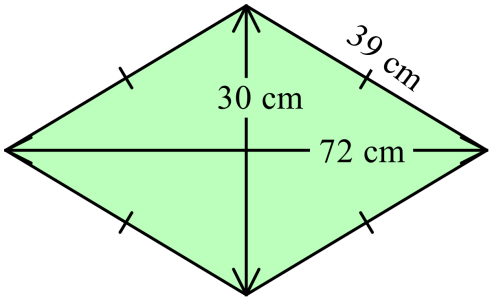
4. What is the perimeter of the parallelogram shown?

- ☐ 6.0 m
- ☐ 6.9 m
- ☐ 10.8 m
- ☐ 12.0 m

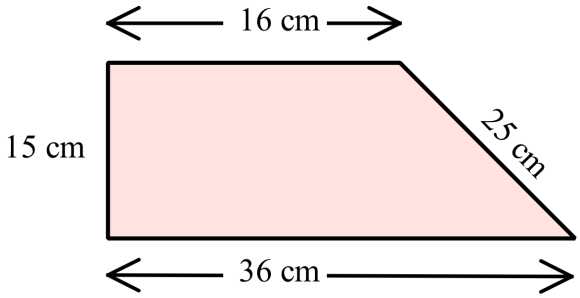


5. What is the perimeter of the rhombus?

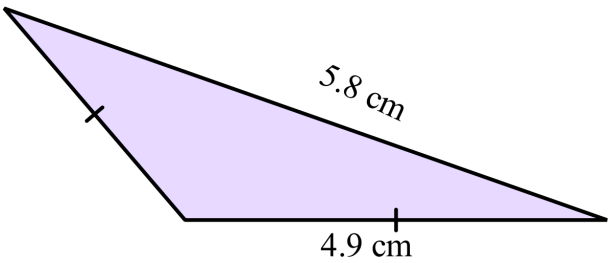
- ☐ 78 cm
- ☐ 102 cm
- ☐ 156 cm
- ☐ 258 cm



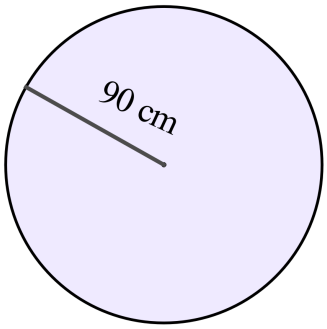
6. A trapezium has the dimensions shown.
What is its perimeter?



7. What is the perimeter of the triangle?

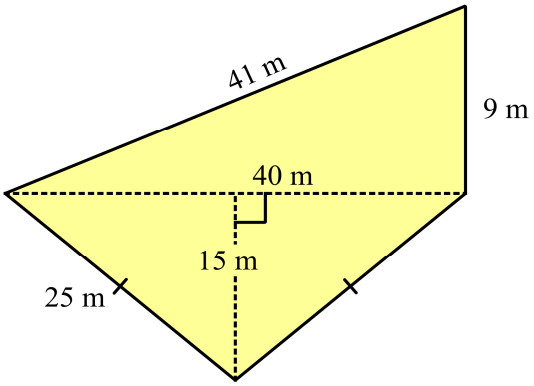


8. Find the circumference of this circle, correct to the nearest cm.



- ☐ 141 cm
- ☐ 283 cm
- ☐ 565 cm
- ☐ 1 131 cm

9. What is the perimeter of the quadrilateral?

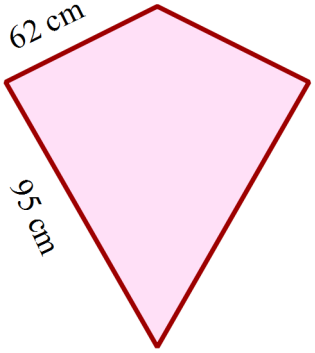


- ☐ 75 m
- ☐ 100 m
- ☐ 115 m
- ☐ 130 m

10. A window is to be made in the shape of a kite with the dimensions shown.

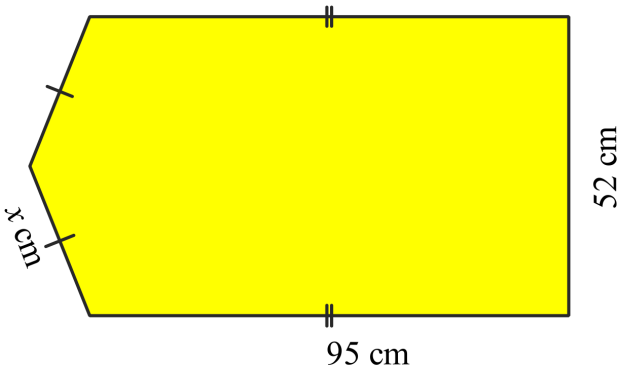
A wooden frame goes around the edge of the window.

What is the total length of wood in the frame?



11. The perimeter of this shape is 330 cm.

What is the value of x?

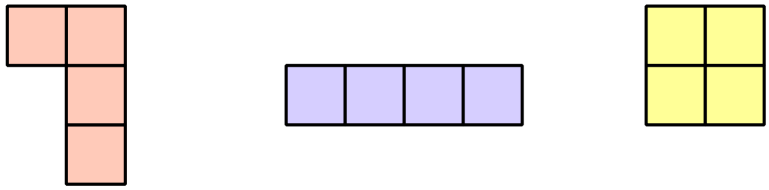


- ☐ 44 cm
- ☐ 88 cm
- ☐ 70 cm
- ☐ 91.5 cm

12. The three shapes below are each made using four 1 cm square tiles.

Which statement below is true?

Shape 1 Shape 2 Shape 3



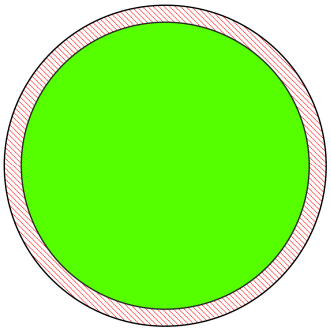
- ☐ All three shapes have the same perimeter.
- ☐ Only shapes 1 and 2 have the same perimeter.
- ☐ Only shapes 1 and 3 have the same perimeter.
- ☐ Only shapes 2 and 3 have the same perimeter.

13. A circular sports ground has a diameter 150 m.

Toby runs laps of the ground for training.

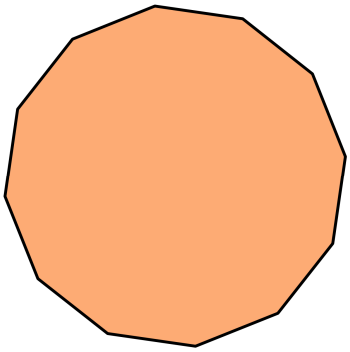
Toby wants to run at least 5 kilometres.

What is the least number of laps of the ground must he complete?



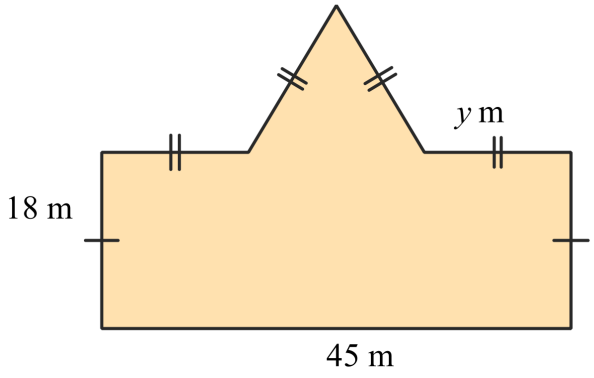
14. A regular polygon shown has a perimeter of 150 cm.

How long is each side?



15. The perimeter of the shape is 143 m.

What is the value of y?



Year 7

Perimeter

Non Calculator Section

ANSWERS

No.	WORKING	ANSWER
1.	$P = 22 + 16 + 25 = 63$ cm	3rd answer
2.	$P = 2 \times (15 + 25) = 80$ m	80 m
3.	$P = 4 \times 15 = 60$ cm	60 cm
4.	$P = 13 + 14 + 15 = 42$ cm	3rd answer
5.	$P = 16 \times 2 + 14 \times 2 = 60\ m$ $= 2 \times (16 + 14) = 60\ m$	2nd answer
6.	$P = 20 + 30 + 8 + 10 + 12 + 20 = 100$ m $= 2 \times (20 + 30) = 100$ m	4th answer
7.	$P = 20 + 34 + 2 \times 25$ $= 54 + 50 = 104$ m	104 m
8.	$P = 2 \times (15 + 32) = 2 \times 47 = 94$ cm	94 cm
9.	$C = \pi \times$ diameter $= \pi \times 30 = 30\pi$ m	2nd answer
10.	$P = 90 \times 2 + 210 \times 2 + 250$ $= 180 + 420 + 250$ $= 850$ cm	4th answer
11.	$P = 45 + 14 \times 3 + 12 \times 2 + 18 \times 2$ $= 45 + 42 + 24 + 36$ $= 147$ m	1st answer

12.	$P = 10 \times 3 + 12 + 18$ $= 30 + 30$ $= 60$ m Cost $= 60 \times 50$ $= \$3\,000$	$3 000
13.	Circumference of whole circle $= \pi \times 32 = 32\pi$ Curved section of quadrant $= 32\pi \div 4 = 8\pi$ Perimeter $= 8\pi + 16 \times 2$ $= 32 + 8\pi$ cm	$32 + 8\pi$ cm
14.	There are 8 intervals of the same length as BC. There are 4 intervals of the same length as AB. Perimeter $= 8 \times 12 + 4 \times AB = 132$ $96 + 4AB = 132$ $4AB = 132 - 96 = 36$ $AB = 36 \div 4 = 9$ cm	9 cm
15.	Curved section has a radius of 30, So length $= \pi \times 60 \div 4 = 15\pi$ Perimeter $= 15\pi + 80 + 30 + (80 - 30)$ $= 15\pi + 160$ m	1st answer

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ANSWERS

No.	WORKING	ANSWER
1.	$P = 4 \times 2.7 = 10.8$ cm	10.8 cm
2.	$P = (1.9 + 3.2) \times 2$ $= 5.1 \times 2$ $= 10.2$ m	10.2 m
3.	$P = 98 + 336 + 350$ $= 784$ cm	1st answer
4.	$P = (4.8 + 1.2) \times 2$ $= 6 \times 2$ $= 12$ m	4th answer
5.	$P = 39 \times 4 = 156$ cm	3rd answer
6.	$P = 16 + 25 + 36 + 15$ $= 92$ cm	92 cm
7.	$P = 5.8 + 4.9 \times 2$ $= 5.8 + 9.8$ $= 15.6$ cm	15.6 cm
8.	$C = \pi \times$ diameter $= \pi \times (90 \times 2)$ $= \pi \times 180$ $= 565.486$ $= 565$ cm (nearest cm)	3rd answer
9.	$P = 41 + 9 + 25 \times 2$ $= 100$ m	2nd answer

10.	$P = 2 \times (62 + 95)$ $= 2 \times 157$ $= 314$ cm	314 cm
11.	$P = 52 + 95 \times 2 + 2x$ $330 = 52 + 190 + 2x$ $330 = 242 + 2x$ $2x = 330 - 242$ $2x = 88$ $x = \frac{88}{2} = 44$ cm	1st answer
12.	Shape 1 has a perimeter of 10 cm Shape 2 has a perimeter of 10 cm Shape 3 has a perimeter of 8 cm Only shapes 1 and 2 have the same perimeter.	2nd answer
13.	Each lap $= \pi \times 150 = 471.238$ m No of laps to run 5 km $= 5000 \div 471.238$ $= 10.6103$ He would need to run 11 laps to run at least 5 km.	11 laps
14.	There are 12 sides Length of side $= 150 \div 12$ $= 12.5$ cm	12.5 cm
15.	$P = 45 + 18 \times 2 + y \times 4$ $143 = 45 + 36 + 4y$ $143 = 81 + 4y$ $4y = 143 - 81 = 62$ $y = \frac{62}{4} = 15.5$ m	15.5 m