Find the length of an arc on a semicircle and quarter circle and the perimeter of a semicircle and quarter circle

Miss Parnham

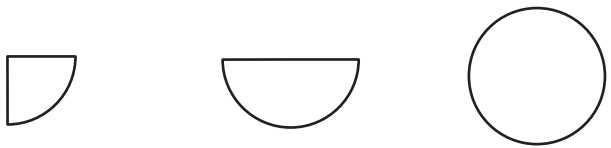
Find the length of an arc on a semicircle and quarter circle and the perimeter of a semicircle and quarter circle

1.Match each arc length formula to a shape.

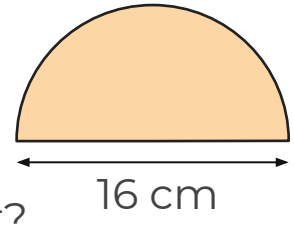
πd

$\frac{\pi d}{4}$

$\frac{\pi d}{2}$



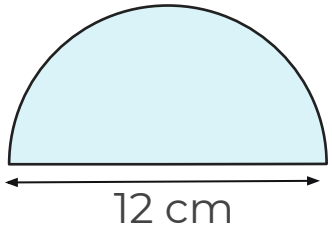
2. a) Find the arc length of this semicircle in terms of π.



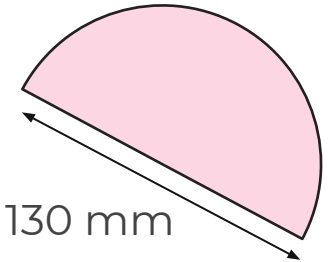
b) What is the perimeter?

3. Find the arc length and the perimeter for each semicircle, correct to 3 significant figures.

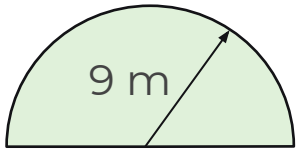
a)



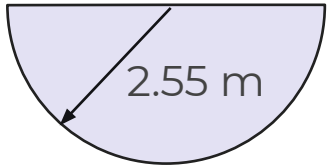
b)



c)

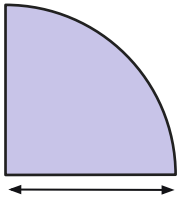


d)



Find the length of an arc on a semicircle and quarter circle and the perimeter of a semicircle and quarter circle

4. a) Find the arc length of this quarter circle in terms of π.

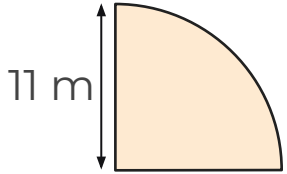


b) What is the perimeter?

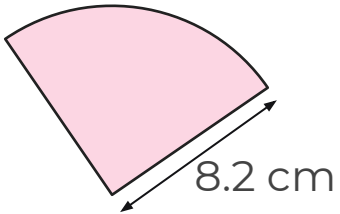
5. Ron says the perimeter of a quarter circle is half that of the semicircle with the same radius.
Is he right?
Why?

6. Find the arc length and the perimeter for each quarter circle, correct to 3 significant figures.

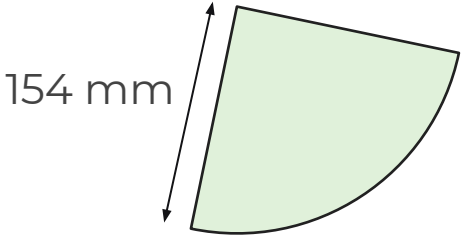
a)



b)



c)



Answers

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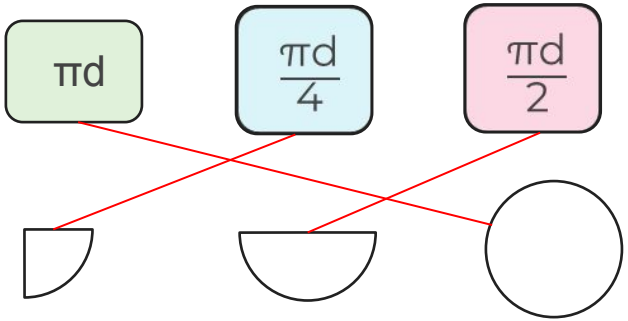
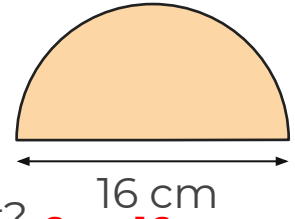
1.Match each arc length formula to a shape.



2. a) Find the arc length of this semicircle in terms of π.

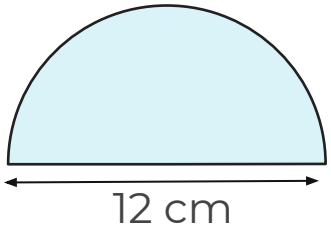


8π cm

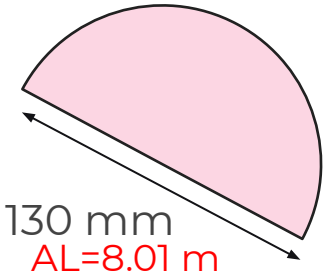
b) What is the perimeter? 8π + 16 cm

3. Find the arc length and the perimeter for each semicircle, correct to 3 significant figures.

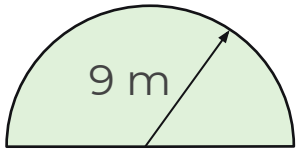
a) AL=18.8 cm P=30.8 cm



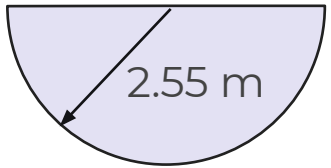
b) AL=204 mm P=334 mm



c) AL=28.3 m P=46.3 m



d) AL=8.01 m P=13.1 m



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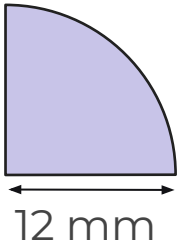
4. a) Find the arc length of this quarter circle in terms of π.



6π mm

b) What is the perimeter?

6π + 24 mm

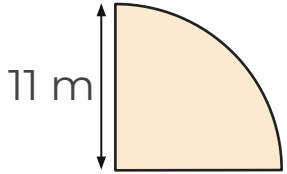
5. Ron says the perimeter of a quarter circle is half that of the semicircle with the same radius.

Is he right? Why?

No, the quarter circle has half the arc length of the semicircle but the straight sides are same length

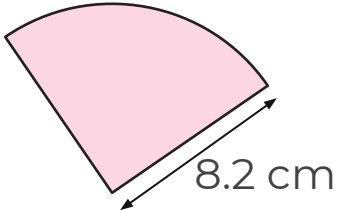
6. Find the arc length and the perimeter for each quarter circle, correct to 3 significant figures.

a)



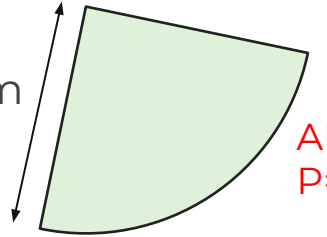
AL=17.3 m
P=39.3 m

b)



AL=12.9 cm
P=29.3 cm

c)



AL=242 mm
P=550 mm