Radius, diameter, circumference and the meaning of pi

6 questions | 11 marks

Equivalent correct methods earn the corresponding marks.

1. A circle has radius 7 cm. Find its diameter. [1 mark]

$2 \times 7 = 14$ cm.

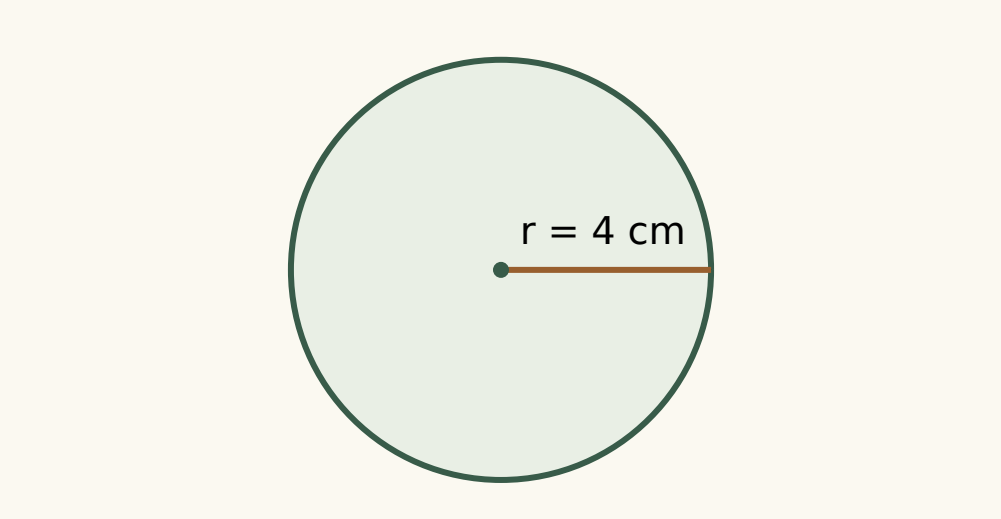
Answer: 14 cm

2. A circle has diameter 9 m. Find its radius. [1 mark]

$9 \div 2 = 4.5$ m.

Answer: 4.5 m

3. Find the exact circumference of a circle of radius 4 cm. [2 marks]



$\text{Diameter} = 8$ cm.

$C = \pi \times 8$.

Answer: 8π cm

4. A wheel has diameter 20 cm. Using $\pi \approx 3.14$, find the distance travelled in one complete turn without slipping. [2 marks]

One turn travels one circumference.

$3.14 \times 20 = 62.8$ cm.

Answer: 62.8 cm

5. A circle has circumference 24π cm. Find its diameter and radius. [2 marks]

Divide C by π to find $d = 24$ cm.

Halve the diameter to find $r = 12$ cm.

Answer: Diameter 24 cm; radius 12 cm

6. A semicircle has diameter 10 cm. Find its complete perimeter, including the straight edge, exactly. [3 marks]

Full circumference would be 10π cm.

The curved half is 5π cm.

Add the straight diameter of 10 cm.

Answer: $(5\pi + 10)$ cm