Circles: 10 practice questions

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Name: _____ Date: _____

Attempt all questions and show your working. Use the π key on your calculator unless a question says otherwise. Suggested time: 15 to 20 minutes.

Section A: Consolidating (Questions 1-4)

Question 1

(a) A circle has a radius of 7 cm. What is its diameter?

(b) A circle has a diameter of 30 m. What is its radius?

Question 2

Find the circumference of a circle with a diameter of 10 cm. Give your answer correct to one decimal place.

Question 3

Find the area of a circle with a radius of 5 cm. Give your answer correct to one decimal place.

Question 4

Find the circumference of a circle with a radius of 3 m. Give your answer in terms of π.

Section B: Standard (Questions 5-10)

Question 5

Copy and complete the table. Give circumferences and areas in terms of π.

Radius	Diameter	Circumference	Area
4 cm			
	18 cm		
0.5 m			

Question 6

A bicycle wheel has a diameter of 70 cm.

(a) How far does the bike travel in one full turn of the wheel? Give your answer in centimetres, correct to one decimal place.

(b) How far does the bike travel in 500 full turns of the wheel? Give your answer in metres, correct to the nearest metre.

Question 7

A circle has a circumference of 31.4 cm. Using $\pi \approx 3.14$, find its diameter.

Question 8

A circle has an area of 153.86 m^2. Using $\pi \approx 3.14$, find its radius.

Question 9

A semicircle has a diameter of 12 cm. Give each answer correct to one decimal place.

(a) Find its area.

(b) Find its perimeter (the curved edge plus the straight edge).

Question 10

A quadrant is a quarter of a circle. A quadrant has a radius of 8 cm. Give each answer correct to one decimal place.

(a) Find its area.

(b) Find its perimeter (the curved edge plus the two straight edges).

Circles: answers

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Question 1

Answer: (a) 14 cm (b) 15 m

Question 2

Answer: 31.4 cm (10π)

Question 3

Answer: 78.5 cm² (25π)

Question 4

Answer: 6π m

Question 5

Answer: Row 1: diameter 8 cm, C = 8π cm, A = 16π cm². Row 2: radius 9 cm, C = 18π cm, A = 81π cm². Row 3: diameter 1 m, C = π m, A = 0.25π m² (also accept (π)/(4) m²)

Question 6

Answer: (a) 219.9 cm (70π) (b) 1100 m (500 × 70π ≈ 109,956 cm)

Question 7

Answer: 10 cm (31.4 ÷ 3.14)

Question 8

Answer: 7 m (r^2 = 153.86 ÷ 3.14 = 49)

Question 9

Answer: (a) 56.5 cm² (½ × π × 6² = 18π) (b) 30.8 cm (6π + 12)

Question 10

Answer: (a) 50.3 cm² (¼ × π × 8² = 16π) (b) 28.6 cm (4π + 16)