Circumference of a Circle - Worksheet

Skill

Group A - Circumference of a circle given the diameter

Calculate the circumference of a circle with diameters below. Give your answers in terms of π:

1) $10cm$ **2)** $5m$ **3)** $2cm$

4) $40mm$ **5)** $8cm$ **6)** $14m$

7) $2.5cm$ **8)** $15mm$ **9)** $100mm$

10) $0.5cm$ **11)** $0.25mm$ **12)** $0.75m$

Group B - Circumference of a circle given the radius

Calculate the circumference of a circle with radii below. Give your answers in terms of π:

1) $40mm$ **2)** $8m$ **3)** $4cm$

4) $5cm$ **5)** $2.5mm$ **6)** $7.5m$

7) $18mm$ **8)** $25cm$ **9)** $100m$

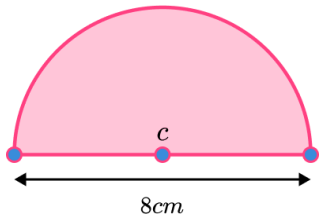
10) $0.75m$ **11)** $10mm$ **12)** $15cm$

Circumference of a Circle - Worksheet

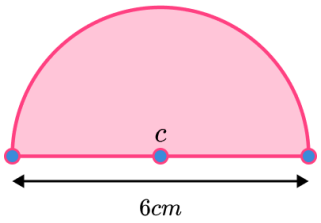
Group C - Perimeter of parts of circles

Calculate the perimeter of the following shapes. Give you answer to 3 significant figures:

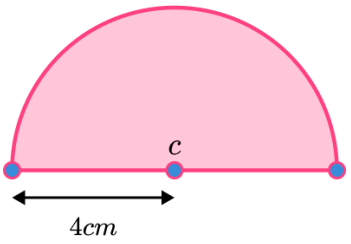
1)



2)



3)



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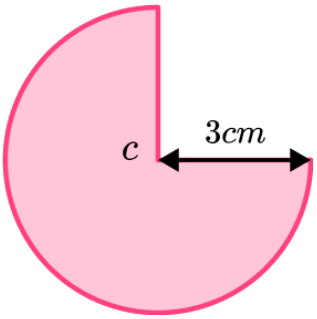
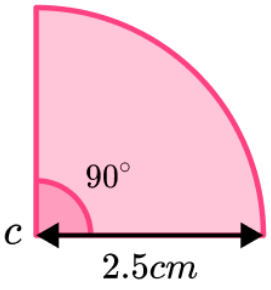
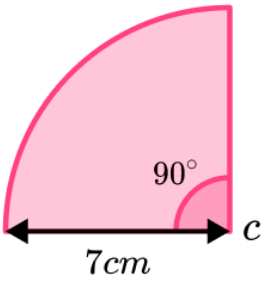


5)



6)



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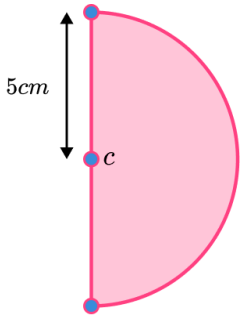
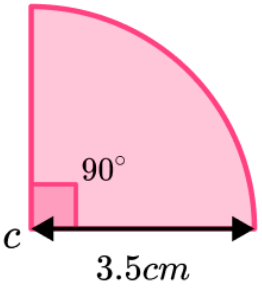
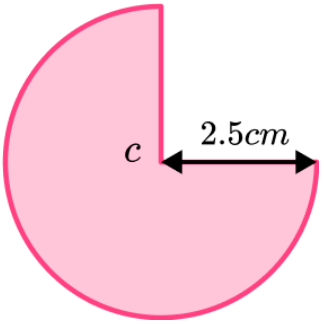


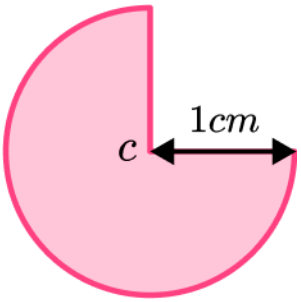
8)



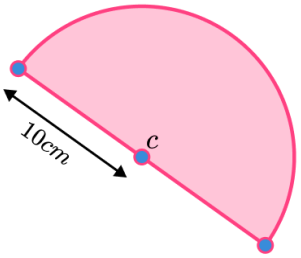
9)



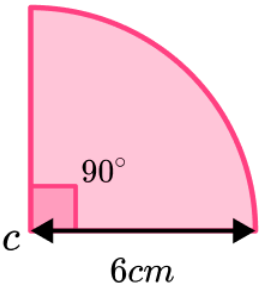
10)



11)



12)



Circumference of a Circle - Worksheet

Applied

1) The circumference of a small wheel is $15.7cm$. The wheel travels $157cm$. How many complete revolutions does the wheel complete?

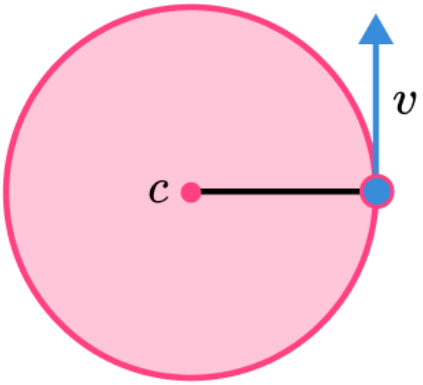
2) A home-made pizza has a radius of $8cm$. The chef wants to add a cheese string to the outer crust. He has made $200.96cm$ of cheese string.

How many pizzas can be made?

3) A circular lemon tart has a radius of $5cm$. Each lemon tart is wrapped by a piece of sugar ribbon. The total length of ribbon available is 7.5 metres.

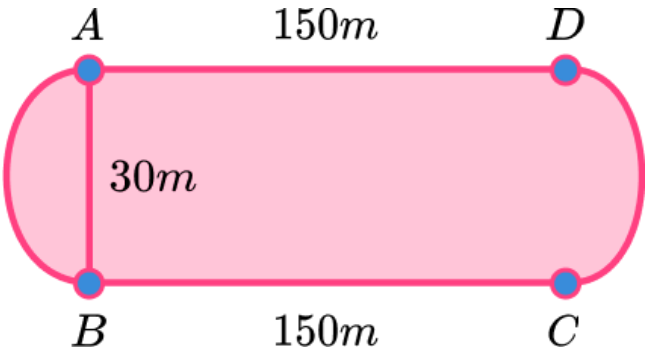
How many lemon tarts can be wrapped?

4) A ball is tethered to a post with a piece of string. The string is $15cm$ long. The ball is swung around the post 20 times before it is released.



Emily says that the tethered ball swings a distance over 20 metres. Is Emily correct?

5) Calculate the perimeter of the track below. Give your answer in metres and to three significant figures.



Circumference of a Circle - Exam Questions

1) The diameter of a wheel on Peter's bicycle is $0.65m$.

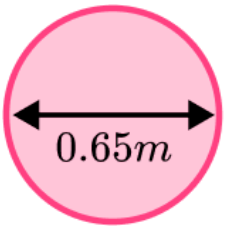


Diagram NOT accurately drawn

Calculate the circumference of the wheel.
Give your answer correct to 2 decimal places.

.....m
(2 marks)

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2) Below is a semicircle.

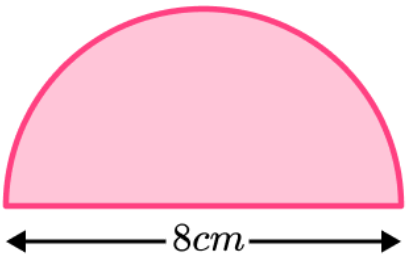


Diagram NOT accurately drawn

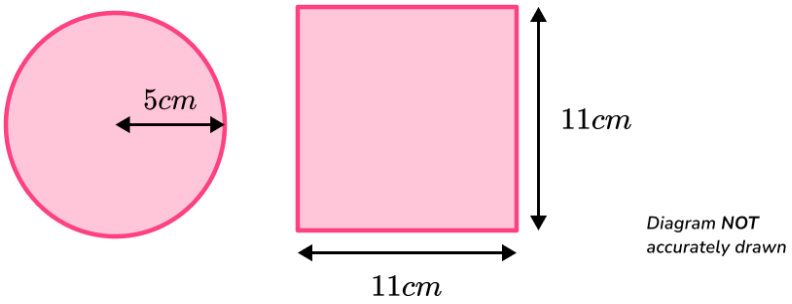
The diameter of the semicircle is $8cm$.

Work out the perimeter.
Give your answer correct to 3 significant figures.

.....cm
(3 marks)

Circumference of a Circle - Exam Questions

3) A circle has a radius of $5cm$. A square has a side length of 11cm.



Work out the difference between the perimeter of the circle and the perimeter of the square. Give your answer correct to 1 decimal place.

.....cm

(4 marks)

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4) A circular mirror has a diameter of $1.5m$. Work out the circumference of the mirror. Give your answer in terms of π.

.....m

(2 marks)

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5) A circular picture frame has a circumference of $37.7cm$.
Calculate the diameter of the picture frame.

.....cm

(2 marks)

Circumference of a Circle - Exam Questions

6) The circumference of a circle is $19.5cm$. Work out the length of the radius of the circle. Give your answer correct to 1 decimal place.

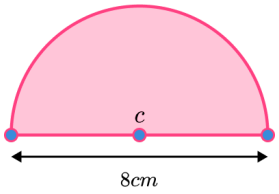
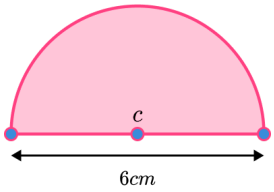
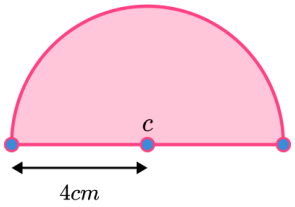
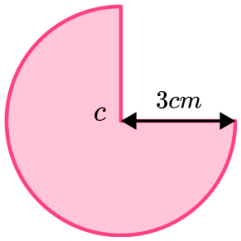
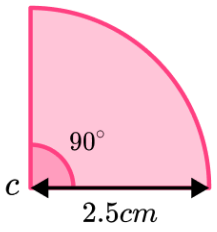
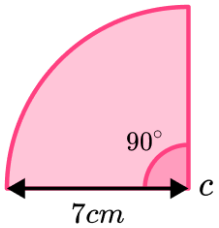
.....cm

(3 marks)

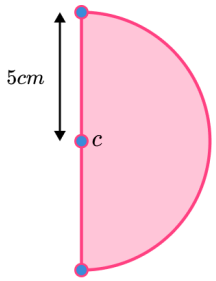
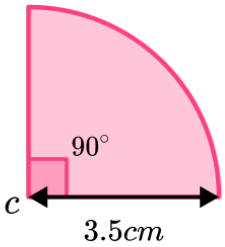
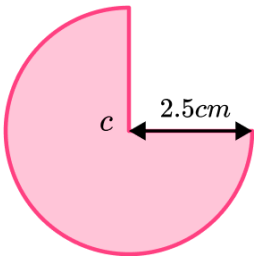
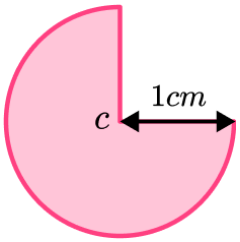
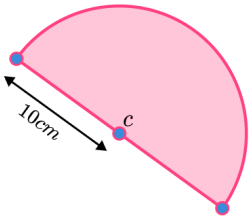
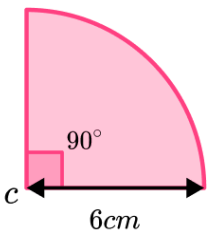
Circumference of a Circle - Answers

	Question	Answer
	Skill Questions	
Group A	Calculate the circumference of a circle with diameters below. Give your answers in terms of π: **1)** $10cm$ **2)** $5m$ **3)** $2cm$ **4)** $40mm$ **5)** $8cm$ **6)** $14m$ **7)** $2.5cm$ **8)** $15mm$ **9)** $100mm$ **10)** $0.5cm$ **11)** $0.25mm$ **12)** $0.75m$	 **1)** $10\pi\ cm$ **2)** $5\pi\ m$ **3)** $2\pi\ cm$ **4)** $40\pi\ mm$ **5)** $8\pi\ cm$ **6)** $14\pi\ m$ **7)** $2.5\pi\ cm$ **8)** $15\pi\ mm$ **9)** $100\pi\ mm$ **10)** $0.5\pi\ cm$ **11)** $0.25\pi\ mm$ **12)** $0.75\pi\ m$
Group B	Calculate the circumference of a circle with radii below. Give your answers in terms of π: **1)** $40mm$ **2)** $8m$ **3)** $4cm$ **4)** $5cm$ **5)** $2.5mm$ **6)** $7.5m$ **7)** $18mm$ **8)** $25cm$ **9)** $100m$ **10)** $0.75m$ **11)** $10mm$ **12)** $15cm$	 **1)** $80\pi\ mm$ **2)** $16\pi\ m$ **3)** $8\pi\ cm$ **4)** $10\pi\ cm$ **5)** $5\pi\ mm$ **6)** $15\pi\ m$ **7)** $36\pi\ mm$ **8)** $50\pi\ cm$ **9)** $200\pi\ m$ **10)** $1.5\pi\ m$ **11)** $20\pi\ mm$ **12)** $30\pi\ cm$

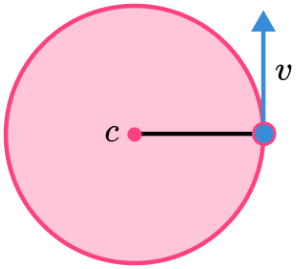
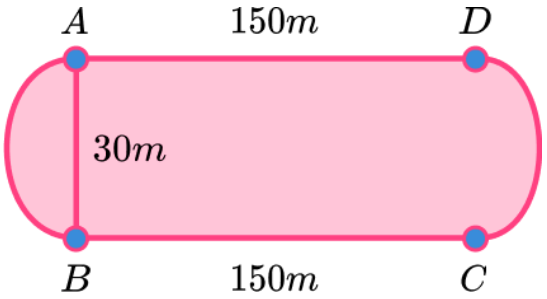
Circumference of a Circle - Answers

Group C	Calculate the perimeter of the following shapes. Give you answer to 3 significant figures: **1)**  **2)**  **3)**  **4)**  **5)**  **6)** 	**1)** $20.6cm$ **2)** $15.4cm$ **3)** $20.6cm$ **4)** $20.1cm$ **5)** $8.93cm$ **6)** $25.0cm$

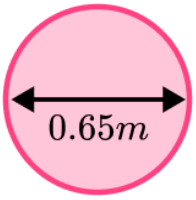
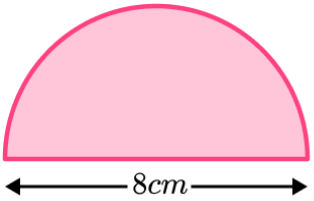
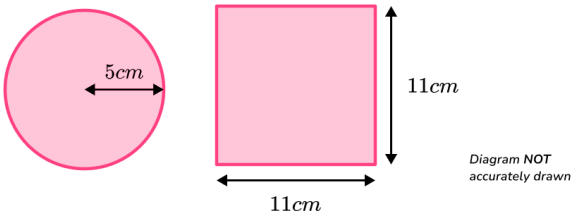
Circumference of a Circle - Answers

Group C contd	**7)** 	**7)** $25.7cm$
	8) 	**8)** $12.5cm$
	9) 	**9)** $16.8cm$
	10) 	**10)** $6.71cm$
	11) 	**11)** $51.4cm$
	12) 	**12)** $21.4cm$

Circumference of a Circle - Answers

	Question	Answer
	Applied Questions	
1)	The circumference of a small wheel is $15.7cm$. The wheel travels $157cm$. How many complete revolutions does the wheel complete?	10
2)	A home-made pizza has a radius of $8cm$. The chef wants to add a cheese string to the outer crust. He has made $200.96cm$ of cheese string. How many pizzas can be made?	4
3)	A circular lemon tart has a radius of $5cm$. Each lemon tart is wrapped by a piece of sugar ribbon. The total length of ribbon available is 7.5 metres. How many lemon tarts can be wrapped?	23
4)	A ball is tethered to a post with a piece of string. The string is $15cm$ long. The ball is swung around the post 20 times before it is released.  Emily says that the tethered ball swings a distance over 20 metres. Is Emily correct?	$20 \times \pi \times 2 \times 15 = 1884\ cm$ No, it swings a distance of $18.84m$
5)	Calculate the perimeter of the track below. Give your answer in metres and to three significant figures. 	$394m$

Circumference of a Circle - Mark Scheme

	Question	Answer	
	Exam Questions		
1)	The diameter of a wheel on Peter's bicycle is $0.65m$. Calculate the circumference of the wheel. Give your answer correct to 2 decimal places.  *Diagram **NOT** accurately drawn*	$0.65 \times \pi$ $2.042035225\ldots$ $2.04m$	**(1)** **(1)**
2)	Below is a semicircle.  *Diagram **NOT** accurately drawn* The diameter of the semicircle is $8cm$. Work out the perimeter. Give your answer correct to 3 significant figures.	$8 \times \pi \div 2\ (= 12.566\ldots)$ $12.566\ldots + 8\ (= 20.566\ldots)$ $20.6cm$	**(1)** **(1)** **(1)**
3)	A circle has a radius of $5cm$. A square has a side length of 11cm.  *Diagram **NOT** accurately drawn* Work out the difference between the perimeter of the circle and the perimeter of the square. Give your answer correct to 1 decimal place.	$10 \times \pi\ (= 31.41\ldots)$ $11 \times 4 (= 44cm)$ $44 - 31.41\ldots\ (= 12.58\ldots)$ $12.6cm$	**(1)** **(1)** **(1)** **(1)**

Circumference of a Circle - Mark Scheme

4)	A circular mirror has a diameter of $1.5m$. Work out the circumference of the mirror. Give your answer in terms of π.	$1.5 \times \pi$ 1.5π	**(1)** **(1)**
5)	A circular picture frame has a circumference of $37.7cm$. Calculate the diameter of the picture frame.	$37.7 \div \pi$ $12cm$	**(1)** **(1)**
6)	The circumference of a circle is $19.5cm$. Work out the length of the radius of the circle. Give your answer correct to 1 decimal place.	$19.5 \div \pi$ $6.207... \div 2$ $3.1\ cm$	**(1)** **(1)** **(1)**