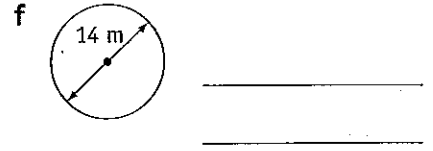
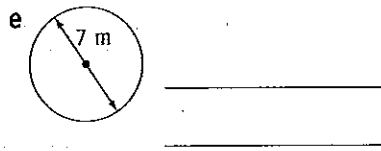
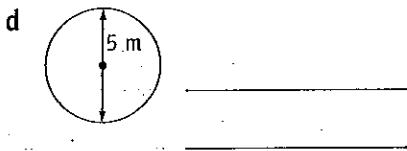
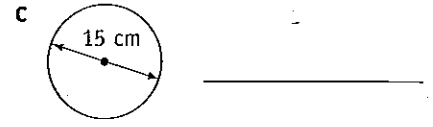
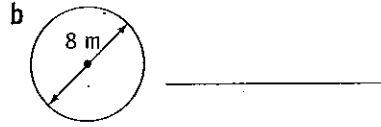
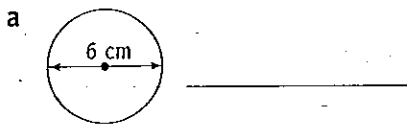


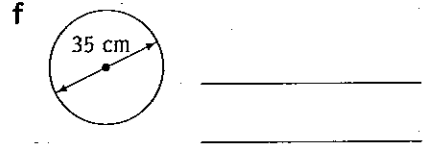
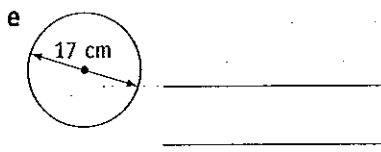
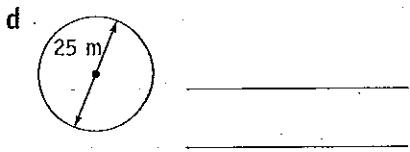
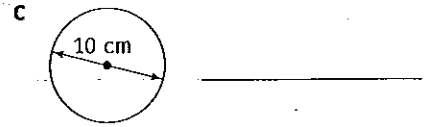
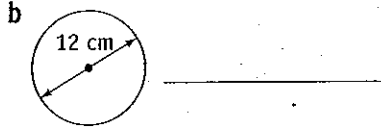
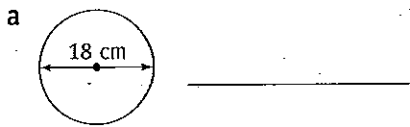
Circles and cylinders

Circumference of a circle when diameter is given

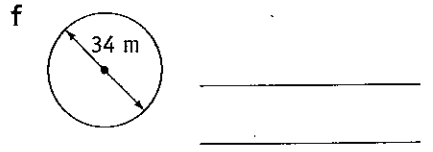
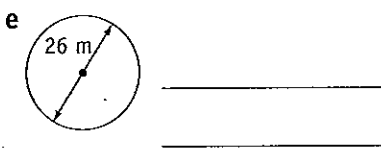
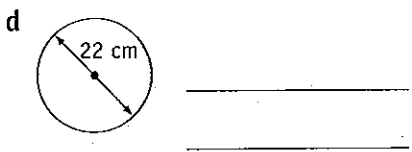
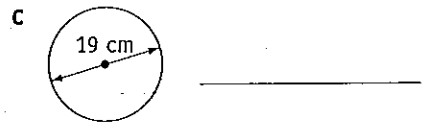
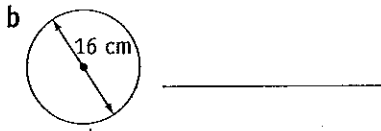
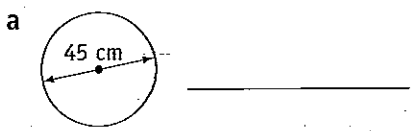
QUESTION 1 Calculate the circumference of the following circles using $\pi = \frac{22}{7}$



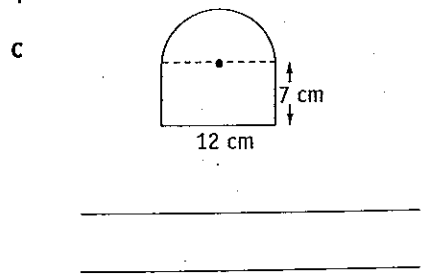
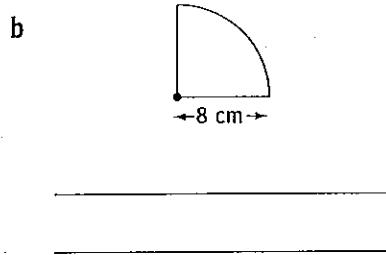
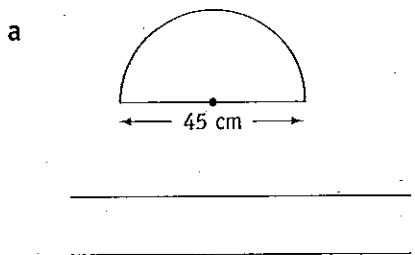
QUESTION 2 Calculate the circumference of the following circles correct to 2 decimal places using the calculator value of π .



QUESTION 3 Calculate the circumference of these circles using $\pi = 3.14$. Give your answers correct to 3 significant figures.



QUESTION 4 Calculate the perimeter of these figures correct to 1 decimal place.

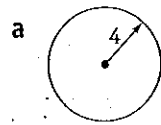


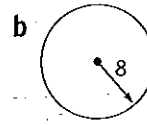
Circles and cylinders

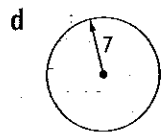
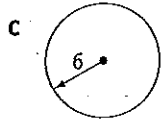


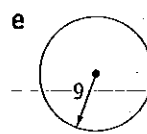
Area of a circle when radius is given

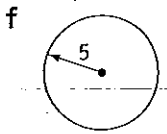
QUESTION 1 Calculate the area of these circles using $\pi = \frac{22}{7}$ (All measurements are in cm)



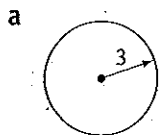


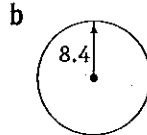


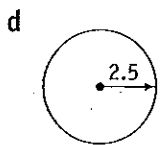
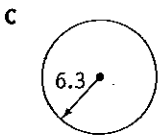


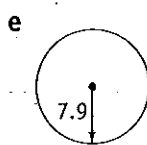


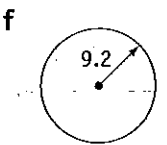
QUESTION 2 Calculate the area of each circles correct to 2 decimal places using the calculator (All measurements are in cm.)



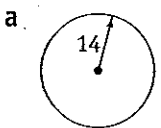


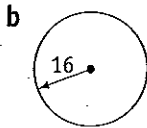


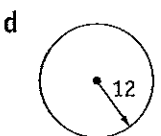
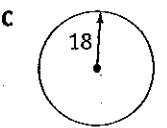


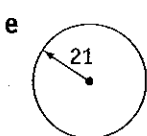


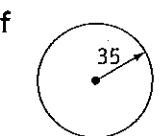
QUESTION 3 Calculate the area of these circles correct to 3 significant figures using $\pi = 3.142$ (All measurements are in cm.)



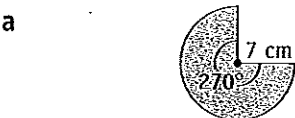


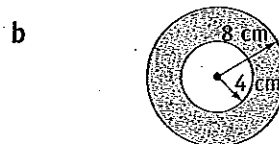






QUESTION 4 Calculate the shaded area correct to 1 decimal place.



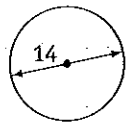
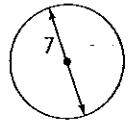
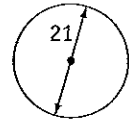
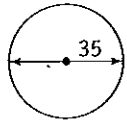
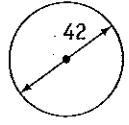
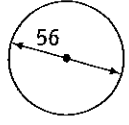




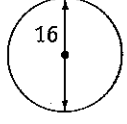
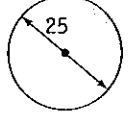
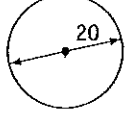
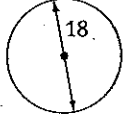
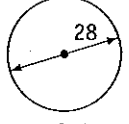
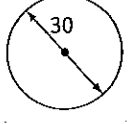
Circles and cylinders

Area of a circle when diameter is given

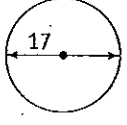
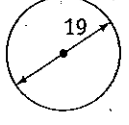
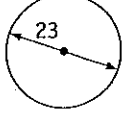
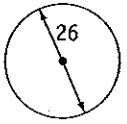
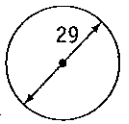
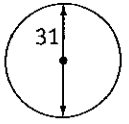
QUESTION 1 Calculate the area of these circles using $\pi = \frac{22}{7}$ (All measurements are in m.)

<p>a</p>  <p>_____</p> <p>_____</p>	<p>b</p>  <p>_____</p> <p>_____</p>	<p>c</p>  <p>_____</p> <p>_____</p>
<p>d</p>  <p>_____</p> <p>_____</p>	<p>e</p>  <p>_____</p> <p>_____</p>	<p>f</p>  <p>_____</p> <p>_____</p>

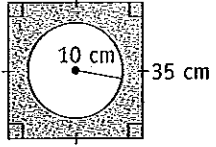
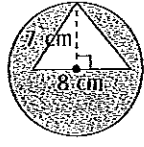
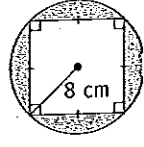
QUESTION 2 Find the area of each circle correct to 2 decimal places using the calculator value of π (All measurements are in cm.)

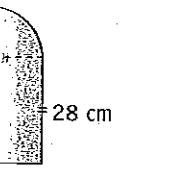
<p>a</p>  <p>_____</p> <p>_____</p>	<p>b</p>  <p>_____</p> <p>_____</p>	<p>c</p>  <p>_____</p> <p>_____</p>
<p>d</p>  <p>_____</p> <p>_____</p>	<p>e</p>  <p>_____</p> <p>_____</p>	<p>f</p>  <p>_____</p> <p>_____</p>

QUESTION 3 Calculate the area of these circles correct to 3 significant figures using $\pi = 3.14$ (All measurements are in cm.)

<p>a</p>  <p>_____</p> <p>_____</p>	<p>b</p>  <p>_____</p> <p>_____</p>	<p>c</p>  <p>_____</p> <p>_____</p>
<p>d</p>  <p>_____</p> <p>_____</p>	<p>e</p>  <p>_____</p> <p>_____</p>	<p>f</p>  <p>_____</p> <p>_____</p>

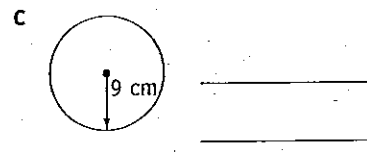
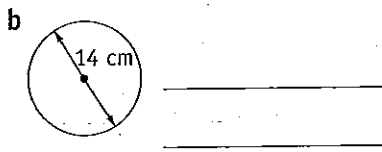
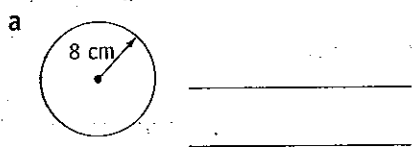
QUESTION 4 Calculate the shaded area correct to 1 decimal place.

<p>a</p>  <p>_____</p> <p>_____</p>	<p>b</p>  <p>_____</p> <p>_____</p>	<p>c</p>  <p>_____</p> <p>_____</p>
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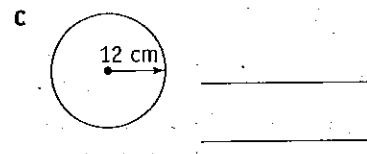
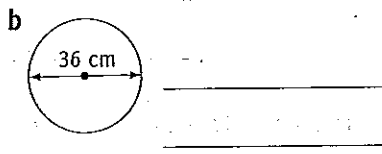
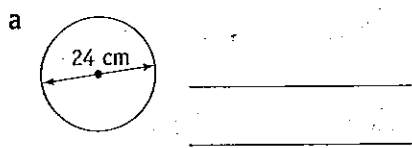


Miscellaneous questions

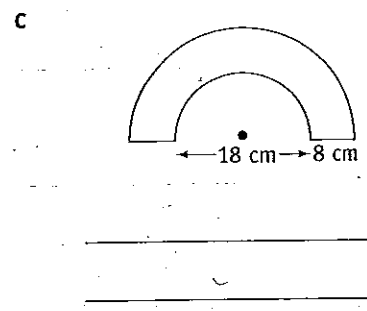
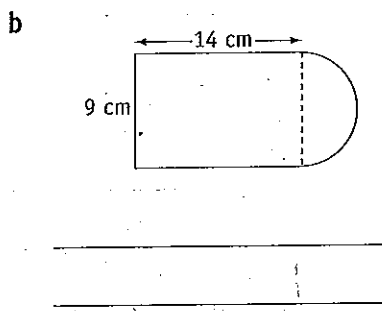
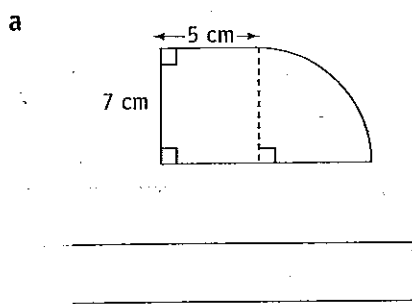
QUESTION 1 Calculate the circumference correct to 2 decimal places.



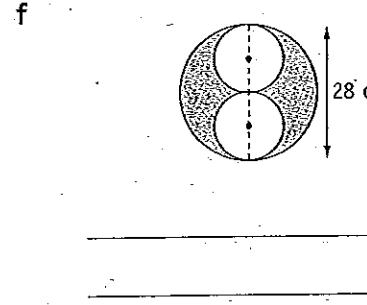
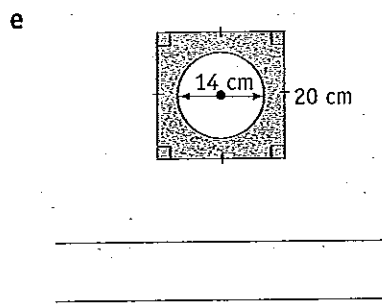
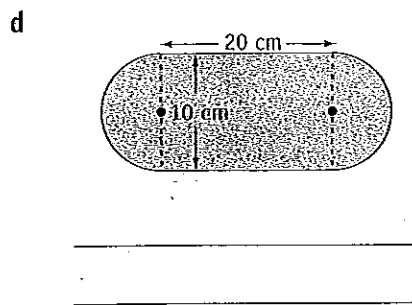
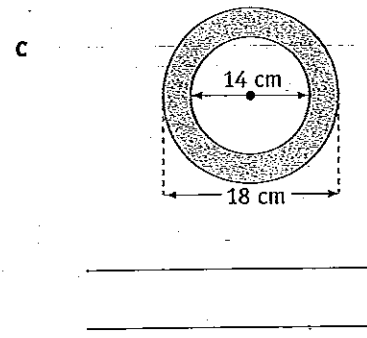
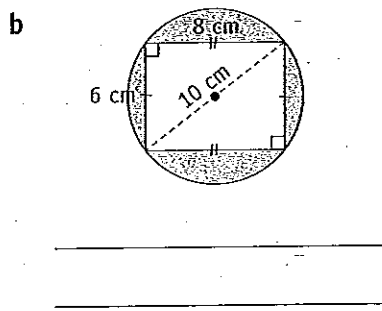
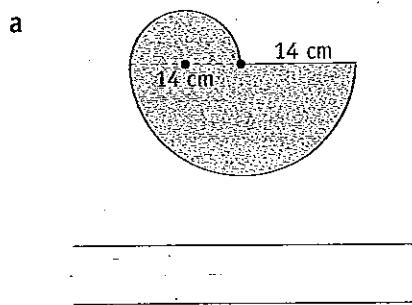
QUESTION 2 Calculate the area correct to 1 decimal place.



QUESTION 3 Calculate the perimeter of each shape correct to 3 significant figures.



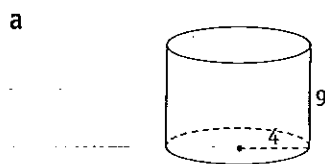
QUESTION 4 Calculate the shaded area correct to 2 decimal places.

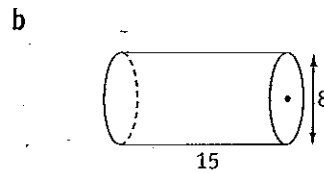


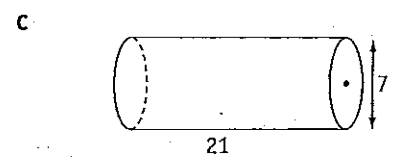
Circles and cylinders

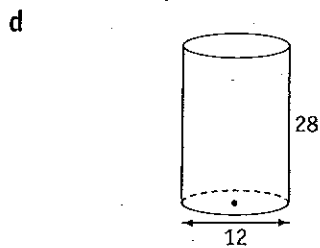
Volume of a cylinder

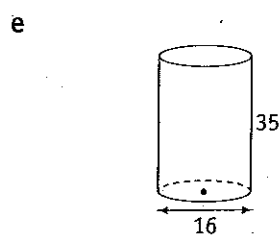
QUESTION 1 Calculate the volume of each cylinder correct to 1 decimal place.
(All measurements are in cm.)

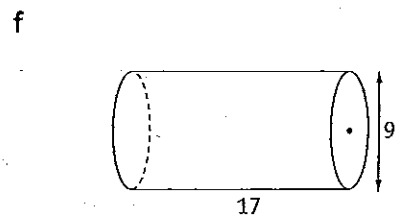




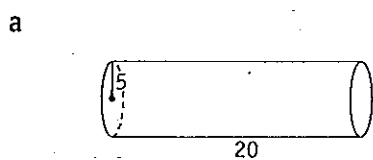


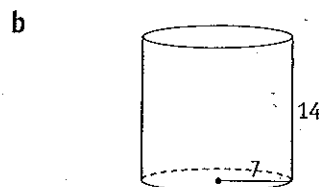


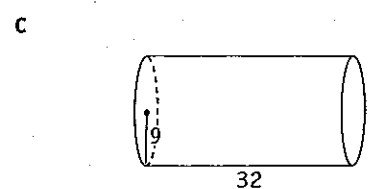




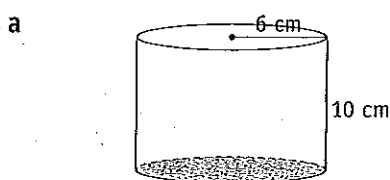
QUESTION 2 Calculate the volume of each cylinder correct to 2 decimal places.
(All measurements are in cm.)

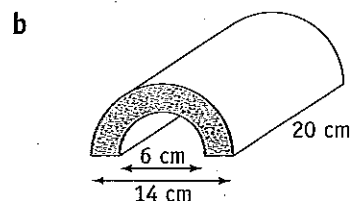


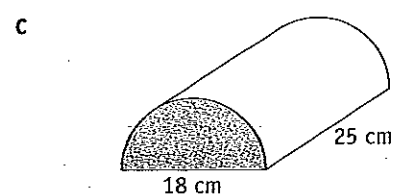




QUESTION 3 Calculate the volume of each solid, giving your answer to the nearest cm^3 .



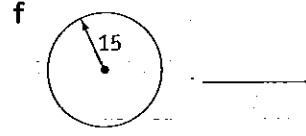
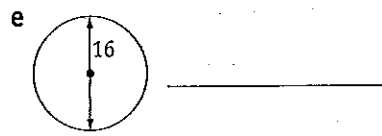
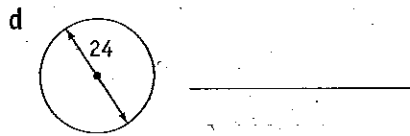
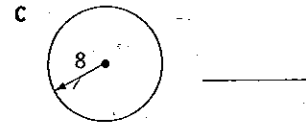
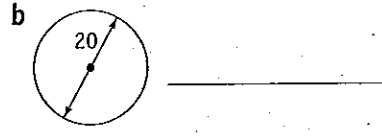
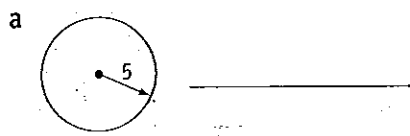




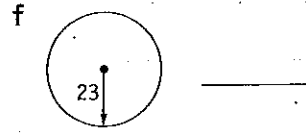
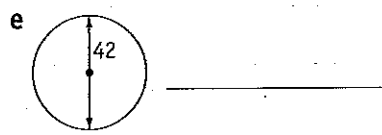
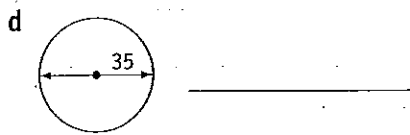
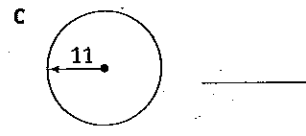
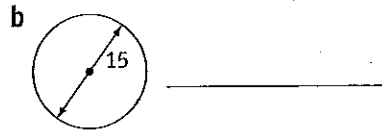
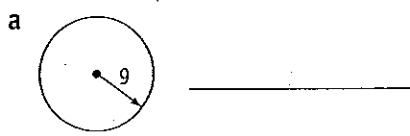
Circles and cylinders

Mixed questions

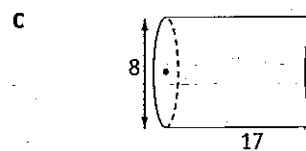
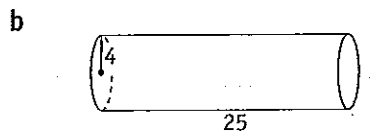
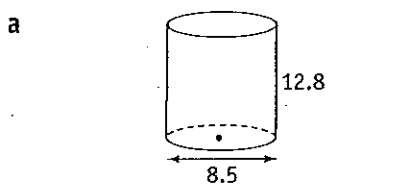
QUESTION 1 Find the circumference of these circles correct to 2 decimal places.
(All measurements are in cm.)



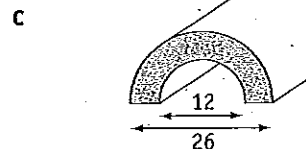
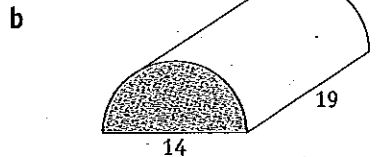
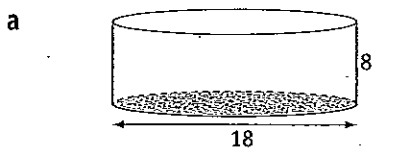
QUESTION 2 Calculate the area of each circle correct to 1 decimal place. (All measurements are in cm.)



QUESTION 3 Calculate the volume of each cylinder correct to 1 decimal place.
(All measurements are in cm.)



QUESTION 4 Find the volume of each solid, giving your answer to the nearest cm^3 .
(All measurements are in cm.)



Circles and cylinders

Problem solving with circles and cylinders

- 1 Calculate the circumference of a circle with radius 63 cm. (Use $\pi = \frac{22}{7}$)

- 2 Calculate the diameter of a circle with a circumference 572 cm. (Use $\pi = \frac{22}{7}$)

- 3 A circular track has radius 42 m. Calculate the distance around the track. (Use $\pi = \frac{22}{7}$)

- 4 Calculate the area of the circle formed by the track in Question 3. (Use $\pi = \frac{22}{7}$)

- 5 Find the volume of a can with diameter 27 cm and height 20 cm.

- 6 The circumference of a circle is 308 cm. Find the area of the circle. (Use $\pi = \frac{22}{7}$)

- 7 Find the area of a round tablecloth if its diameter is 5 metres. (Use $\pi = 3.14$)

- 8 A circular ring has a radius of 2.8 metres. What is the perimeter of the ring?

- 9 What is the cooking area of a circular barbeque grill having radius 14 cm?

- 10 What distance do you ride in one turn of a merry-go-round when you sit 8.5 metres from the centre?

- 11 Find the circumference of a circle with diameter 64 cm.

- 12 Find the area of a circle of radius 9 cm.

Circles and cylinders

TOPIC TEST

PAF


- Instructions**
- This part consists of 15 multiple choice questions
 - Fill in only ONE CIRCLE for each question
 - Each question is worth 1 mark
 - Calculators may be used

Time allowed: 15 minutes

Total marks = 15

- 1** The diameter and radius of a circle are related as
- (A) $r = 2d$ (B) $rd = 2$ (C) $d = 2r$ (D) none of these
- 2** The exact value of π is
- (A) 3.14 (B) 3.142 (C) $\frac{22}{7}$ (D) none of these
- 3** The circumference of a circle is given by the formula
- (A) $\frac{2\pi}{r}$ (B) $\frac{2\pi}{d}$ (C) $2\pi r$ (D) $2\pi d$
- 4** The area of a circle is given by the formula
- (A) πr^2 (B) πd^2 (C) $\frac{\pi}{r^2}$ (D) $\frac{\pi}{d^2}$
- 5** The volume of a cylinder with radius r and height h equals
- (A) $\pi r^2 h$ (B) $\pi r h^2$ (C) $\pi^2 r h$ (D) $\pi r h$
- 6** A semi-circle equals
- (A) a full circle (B) half a circle
(C) a quarter of a circle (D) a third of a circle
- 7** A chord cuts the circle at
- (A) 1 point (B) 2 points (C) 3 points (D) no point
- 8** A tangent cuts the circle at
- (A) 1 point (B) 2 points (C) 3 points (D) no point
- 9** A quadrant is
- (A) $\frac{3}{4}$ of a circle (B) $\frac{1}{2}$ of a circle (C) $\frac{1}{4}$ of a circle (D) none of these

A

- 10** The circumference of a circle with diameter 14 cm equals
Ⓐ 46 cm Ⓑ 48 cm Ⓒ 44 cm Ⓓ 42 cm
- 11** The area of a circle with radius 14 cm equals
Ⓐ 610 cm² Ⓑ 616 cm² Ⓒ 622 cm² Ⓓ none of these
- 12** The diameter of a circle is 24 cm. Its radius is
Ⓐ 6 cm Ⓑ 8 cm Ⓒ 12 cm Ⓓ 16 cm
- 13** The area of a circle of radius 3 cm is approximately equal to
Ⓐ 27 cm² Ⓑ 28 cm² Ⓒ 29 cm² Ⓓ none of these
- 14** $\frac{3}{4}$ of a circle is called a
Ⓐ semi-circle Ⓑ quadrant Ⓒ sector Ⓓ segment
- 15**  The shaded area in the figure is called a
Ⓐ semi-circle Ⓑ segment Ⓒ chord Ⓓ sector

Marks

- 1
- 1
- 1
- 1
- 1
- 1

Total marks achieved for PART A

15

Circles and cylinders

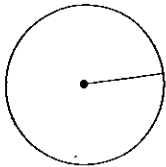
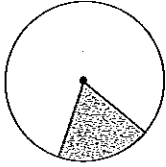
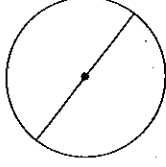
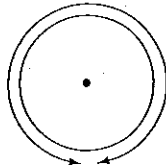
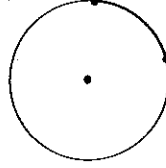
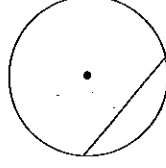
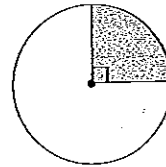
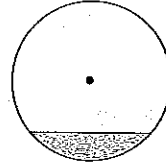
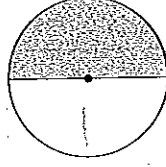
TOPIC TEST

PART B

- Instructions**
- This part consists of 15 questions
 - Each question is worth 1 mark
 - Write answers in the 'Answers only' column

Time allowed: 15 minutes

Total marks = 15

Questions			Answers only
Name the parts of the circle below.			
1		2	
3		4	
5		6	
7		8	
9			
10	Write the formula for the area of a circle.		
11	Write the formula for the circumference of a circle.		
12	Write the value of π correct to 3 decimal places.		
13	Find the diameter of a circle of circumference 35 cm correct to 2 decimal places.		
14	Calculate the volume of a cylinder of radius 4 cm and height 5 cm.		
15	Calculate the volume (to the nearest cm^3) of a cylinder of radius 7 cm and height 9 cm.		

Total marks achieved for PART B

Circles and cylinders

TOPIC TEST

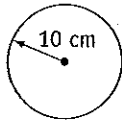
PART C

- Instructions**
- This part consists of 4 questions
 - Each question is worth 5 marks
 - Show all necessary working

Time allowed: 20 minutes

Total marks = 20

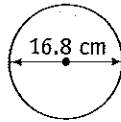
1 a



circumference = _____

area = _____

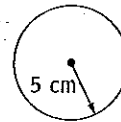
b



circumference = _____

area = _____

c



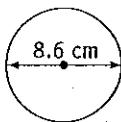
perimeter = _____

Marks

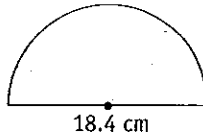
5

2 Calculate the perimeter of each shape.

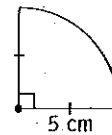
a



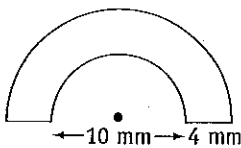
b



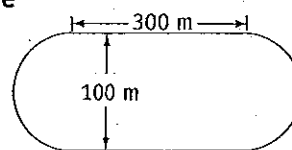
c



d



e



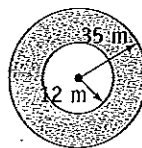
5

3

a Find the area of a circle with radius 16 cm. _____

b Find the volume of a cylinder with radius 12 cm and height 8 cm.

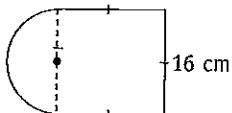
c Find the shaded area in the figure.



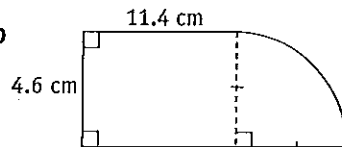
5

4 Find the (shaded) area of each figure correct to 2 decimal places.

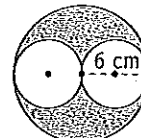
a



b



c



5

Total marks achieved for PART C

20

ANSWERS

- PAGE 79** 1 a $18\frac{6}{7}$ cm b $25\frac{1}{7}$ m c $47\frac{1}{7}$ cm d $15\frac{5}{7}$ m e 22 m f 44 m 2 a 56.55 cm b 37.70 cm c 31.42 cm
d 78.54 m e 53.41 cm f 109.96 cm 3 a 141 cm b 50.2 cm c 59.7 cm d 69.1 cm e 81.6 m f 107 m 4 a 115.7 cm
b 28.6 cm c 44.8 cm
- PAGE 80** All answers are in cm^2 . 1 a $50\frac{2}{7}$ b $201\frac{1}{7}$ c $113\frac{1}{7}$ d 154 e $254\frac{4}{7}$ f $78\frac{4}{7}$ 2 a 28.27 b 221.67 c 124.69
d 19.63 e 196.07 f 265.90 3 a 615 b 804 c 1020 d 452 e 1380 f 3850 4 a 115.5 b 150.8 c 1091.9
- PAGE 81** 1 a 154 m^2 b $38\frac{1}{2} \text{ m}^2$ c $346\frac{1}{2} \text{ m}^2$ d $962\frac{1}{2} \text{ m}^2$ e 1386 m^2 f 2464 m^2 2 a 201.06 cm^2 b 490.87 cm^2
c 314.16 cm^2 d 254.47 cm^2 e 615.75 cm^2 f 706.86 cm^2 3 a 227 cm^2 b 283 cm^2 c 415 cm^2 d 531 cm^2 e 660 cm^2
f 754 cm^2 4 a 910.8 cm^2 b 125.9 cm^2 c 73.1 cm^2
- PAGE 82** 1 a 50.27 cm b 43.98 cm c 56.55 cm 2 a 452.4 cm^2 b 1017.9 cm^2 c 452.4 cm^2 3 a 35.0 cm b 51.1 cm
c 97.7 cm 4 a 384.85 cm^2 b 30.54 cm^2 c 100.53 cm^2 d 278.54 cm^2 e 246.06 cm^2 f 307.88 cm^2
- PAGE 83** 1 a 452.4 cm^3 b 754.0 cm^3 c 808.2 cm^3 d 3166.7 cm^3 e 7037.2 cm^3 f 1081.5 cm^3 2 a 392.70 cm^3
b 538.78 cm^3 c 2035.75 cm^3 3 a 1131 cm^3 b 1257 cm^3 c 3181 cm^3
- PAGE 84** 1 a 31.42 cm b 62.83 cm c 50.27 cm d 75.40 cm e 50.27 cm f 94.25 cm 2 a 254.5 cm^2 b 176.7 cm^2
c 380.1 cm^2 d 962.1 cm^2 e 1385.4 cm^2 f 1661.9 cm^2 3 a 726.3 cm^3 b 1256.6 cm^3 c 854.5 cm^3 4 a 2036 cm^3
b 1462 cm^3 c 4178 cm^3
- PAGE 85** 1 396 cm 2 182 cm 3 264 m 4 5544 m^2 5 11 451.1 cm^3 6 7546 cm^2 7 19.625 m^2 8 17.59 cm^2
9 615.75 cm^2 10 53.41 m 11 201.06 cm 12 254.47 cm^2
- PAGES 86 & 87** 1 C 2 D 3 C 4 A 5 A 6 B 7 B 8 A 9 C 10 C 11 B 12 C 13 B 14 C 15 B
- PAGE 88** 1 radius 2 sector 3 diameter 4 circumference 5 arc 6 chord 7 quadrant 8 minor segment 9 semi-circle
10 $A = \pi r^2$ 11 $C = 2\pi r$ 12 3.142 13 11.14 cm 14 251.33 cm^3 15 1385 cm^3
- PAGE 89** 1 a 62.83 cm; 314.16 cm^2 b 52.78 cm; 221.67 cm^2 c 31.42 cm 2 a 27.02 cm b 47.3 cm c 17.85 cm
d 51.98 mm e 914.16 m 3 a 804.25 cm^2 b 3619.11 cm^3 c 3396.06 cm^2 4 a 457.06 cm^2 b 69.06 cm^2 c 56.55 cm^2