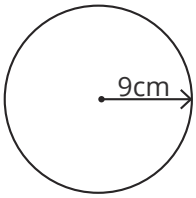
Your Turn

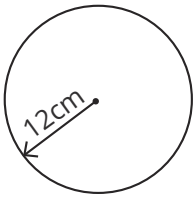
1. Calculate the area of the circle, giving your answer correct to the nearest whole number.



$\pi \times 9^2 = 254.4690049...$

$254cm^2$

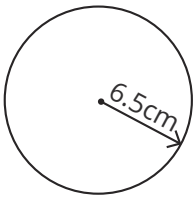
2. Calculate the area of the circle, giving your answer correct to the nearest whole number.



$\pi \times 12^2 = 452.3893421...$

$452cm^2$

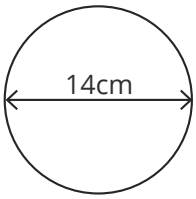
3. Calculate the area of the circle, giving your answer correct to 1 decimal place.



$\pi \times 6.5^2 = 132.7322896...$

$132.7cm^2$

4. Calculate the area of the circle, giving your answer correct to 2 decimal places.

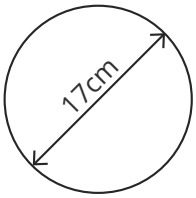


$14 \div 2 = 7cm$

$\pi \times 7^2 = 153.93804...$

$153.94cm^2$

5. Calculate the area of the circle, giving your answer correct to 1 decimal place.

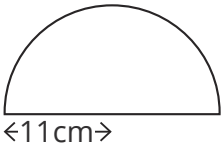


$17 \div 2 = 8.5cm$

$\pi \times 8.5^2 = 226.9800692...$

$227.0cm^2$

6. Calculate the area of the semicircle, giving your answer correct to the nearest whole number.

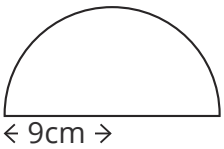


$\pi \times 11^2 = 380.1327111...$

$380.1327111... \div 2 = 190.0663555...$

$190cm^2$

7. Calculate the area of the semicircle, giving your answer correct to 1 decimal place.

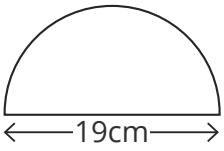


$\pi \times 9^2 = 254.4690049...$

$254.4690049 \div 2 = 127.2345025...$

$127.2cm^2$

8. Calculate the area of the semicircle, giving your answer correct to 1 decimal place.



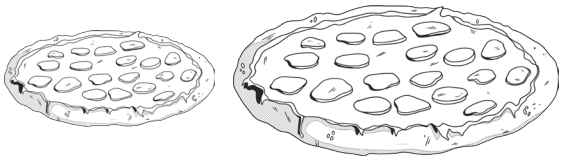
$19 \div 2 = 9.5cm$

$\pi \times 9.5^2 = 283.528737...$

$283.528737 \div 2 = 141.7643685...$

$141.8cm^2$

9. A small pizza has a diameter of 20cm. A large pizza has a diameter of 30cm.



a. Find the area of the top of each pizza, giving each answer correct to the nearest whole number.

Small pizza

20 ÷ 2 = 10cm

$\pi \times 10^2 = 314.1592654...$

$314cm^2$

Large pizza

30 ÷ 2 = 15cm

$\pi \times 15^2 = 706.8583471...$

$707cm^2$

b. The small pizza costs £5.20 and the large pizza costs £8.10. Which is better value for money and why?

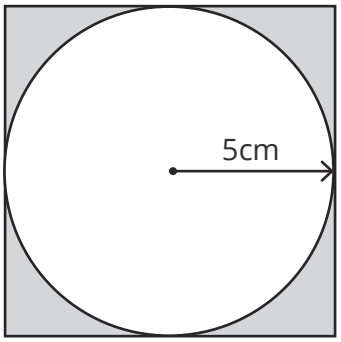
Small pizza: 5.20 ÷ 314.1592654 = £0.01655211408 per cm^2

Large pizza: 8.10 ÷ 706.8583471 = £0.0114591559 per cm^2

The large pizza presents better value for money because it is cheaper per cm^2

Challenge

A circle of radius 5cm is drawn inside a square. The edges of the circle touch each side of the square.



Calculate the area of:

a. the square

5 × 2 = 10cm

$10 \times 10 = 100cm^2$

b. the circle, giving your answer correct to the nearest whole number.

$\pi \times 5^2 = 78.53981634...$

$79cm^2$

c. the region of the square not covered by the circle, correct to the nearest whole number.

100 – 78.53981634... = 21.46018366...

$21cm^2$