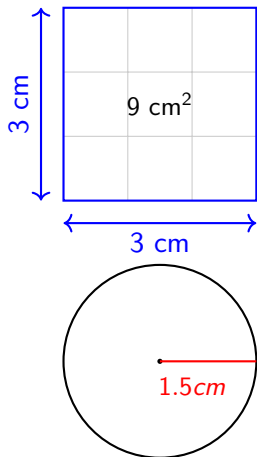


Circles: Area, Squaring & Pi

Starter



1. $4 \times 4 = ?$

2. $7 \times 7 = ?$

3. $10^2 = ?$

4. $3^2 = ?$

5. 2×6 and 6^2 — are these the same?

6. $3.14 \times 9 = \underline{\hspace{2cm}}$

7. $3.14 \times 25 = \underline{\hspace{2cm}}$

7. A circle has **diameter** 14 cm. Find:

(a) the radius $\underline{\hspace{2cm}}$

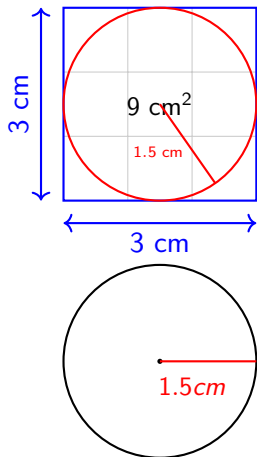
(b) the circumference $\underline{\hspace{2cm}}$.

($\pi \approx 3.14$)

8. A circle has **radius** 5 cm. What is the circumference? $\underline{\hspace{2cm}}$

9. The square has side 3 cm and area 9 cm². A circle has radius 1.5 cm. Is the circle's area more or less than 9 cm²?

Starter



1. $4 \times 4 = 16$

2. $7 \times 7 = 49$

3. $10^2 = 100$

4. $3^2 = 9$

5. 2×6 and 6^2 — are these the same? **No:**
 $12 \neq 36$.

6. $3.14 \times 9 = 28.26$

7. $3.14 \times 25 = 78.5$

7. A circle has **diameter** 14 cm. Find:

(a) the radius **7 cm**

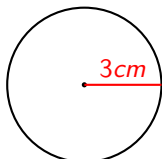
(b) the circumference **43.96 cm**.

($\pi \approx 3.14$)

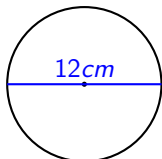
8. A circle has **radius** 5 cm. What is the circumference? **31.4 cm**

9. The square has side 3 cm and area 9 cm². A circle has radius 1.5 cm. Is the circle's area more or less than 9 cm²? **Less:**
 $\pi(1.5)^2 \approx 7.07 \text{ cm}^2$.

Starter



Circle A

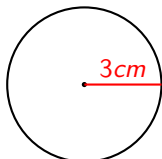


Circle B

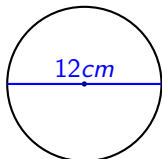
1. Halve 12 cm ____
2. Halve 9.4 cm

3. $6^2 = ?$
4. $1.5^2 = ?$
5. $3 \times 4^2 = \underline{\hspace{1cm}}$
6. True or false?
 $\pi \times (2r) = 2 \times \pi \times r$
7. Consider circle A
 - (a) What is the circumference? _____
 - (b) What is the area? _____
8. Consider circle B
 - (a) What is the circumference? _____
 - (b) What is the area? _____
9. Is the ratio of the circumferences of circle's A and B the same as the ratio of the areas?

Starter



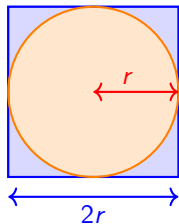
Circle A



Circle B

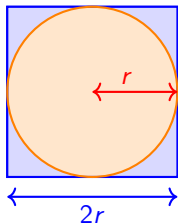
1. Halve 12 cm **6 cm**
2. Halve 9.4 cm
4.7 cm
3. $6^2 =$ **36**
4. $1.5^2 =$ **2.25**
5. $3 \times 4^2 =$ **48**
6. True or false?
 $\pi \times (2r) = 2 \times \pi \times r$
True
7. Consider circle A
 - (a) What is the circumference? **18.84 cm**
 - (b) What is the area? **28.26 cm²**
8. Consider circle B
 - (a) What is the circumference? **37.68 cm**
 - (b) What is the area? **113.04 cm²**
9. Is the ratio of the circumferences of circle's A and B the same as the ratio of the areas? **No: 1 : 2 vs 1 : 4.**

Starter



1. $5 \times 5 = ?$
2. $8^2 = ?$
3. $2.5^2 = ?$
4. $3.14 \times 9 = \underline{\hspace{2cm}}$
5. Area of a $7 \text{ cm} \times 4 \text{ cm}$ rectangle $= ?$
6. What fraction of 360° is 90° ?
7. Write an expression for the area of the circle in the picture
8. Write an expression for the area of the shaded blue region in the picture
9. If the square has a perimeter of 48 cm , what is the area of the shaded blue region?

Starter



1. $5 \times 5 = 25$
2. $8^2 = 64$
3. $2.5^2 = 6.25$
4. $3.14 \times 9 = 28.26$
5. Area of a $7 \text{ cm} \times 4 \text{ cm}$ rectangle = 28 cm^2
6. What fraction of 360° is 90° ? $\frac{1}{4}$
7. Write an expression for the area of the circle in the picture πr^2
8. Write an expression for the area of the shaded blue region in the picture $4r^2 - \pi r^2$
9. If the square has a perimeter of 48 cm , what is the area of the shaded blue region? 30.96 cm^2

Starter

1. $9^2 = ?$

2. $3.5^2 = ?$

3. 3.14×16

4. 3.14×49

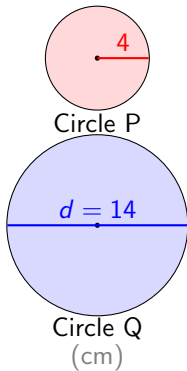
5. Halve 14 cm. Then square your answer.

6. A square has area 64 cm^2 . What is its side length ?

7. **Spot the mistake:** "Circle Q has diameter 14 cm, so its area is $\pi \times 14^2 \approx 615 \text{ cm}^2$." What error was made? Write the correct solution.

8. **Circle P**, radius 4 cm. Find: (a) the area _____ (b) the circumference _____.

9. **Circle Q**, diameter 14 cm. Find: (a) the area _____ (b) the circumference _____.



Starter

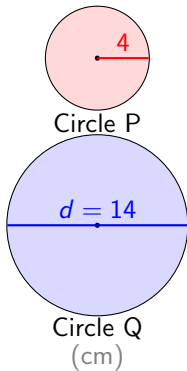
1. $9^2 = 81$

2. $3.5^2 = 12.25$

3. $3.14 \times 16 = 50.24$ 4. $3.14 \times 49 = 153.86$

5. Halve 14 cm. Then square your answer.
7 cm, so 49 cm^2

6. A square has area 64 cm^2 . What is its side length 8 cm



7. **Spot the mistake:** "Circle Q has diameter 14 cm, so its area is $\pi \times 14^2 \approx 615 \text{ cm}^2$." What error was made? Write the correct solution. **Used diameter not radius: $\pi \times 7^2 \approx 153.86 \text{ cm}^2$.**

8. **Circle P**, radius 4 cm. Find: (a) the area 50.24 cm^2 (b) the circumference 25.12 cm .

9. **Circle Q**, diameter 14 cm. Find: (a) the area 153.86 cm^2 (b) the circumference