

GRADE 6 MATHEMATICS

PERIMETER & AREA

Complete printable worksheet pack

Perimeter • area • composite shapes • missing dimensions • scale • real-life reasoning

Worksheet 1: Perimeter of 2D Shapes

Show your working. Include square units for area and ordinary units for perimeter.

1. Find the perimeter of a rectangle measuring 18 cm by 7 cm.
2. Find the perimeter of a square with side length 12.5 m.
3. A triangle has sides 8.5 cm, 11 cm and 13.5 cm. Find its perimeter.
4. A regular pentagon has five equal sides of 7.2 cm. Find its perimeter.
5. A rectangle has perimeter 54 cm and length 17 cm. Find its width.
6. A garden is 24 m long and 15 m wide. How much fencing is needed to go around it?
7. A regular hexagon has a perimeter of 72 cm. Find the length of each side.
8. Challenge: A rectangle has perimeter 86 m. Its length is 7 m more than its width. Find both dimensions.

Answer Key — 1: Perimeter of 2D Shapes

1. 50 cm.
2. 50 m.
3. 33 cm.
4. 36 cm.
5. 10 cm.
6. 78 m.
7. 12 cm.
8. Width 18 m; length 25 m.

Teacher note: Accept equivalent correct methods and clearly shown working.

Worksheet 2: Area of Rectangles, Squares & Triangles

Show your working. Include square units for area and ordinary units for perimeter.

1. Find the area of a rectangle measuring 16 cm by 9 cm.
2. Find the area of a square with side length 13.5 m.
3. Find the area of a triangle with base 18 cm and height 11 cm.
4. A rectangle has area 216 cm^2 and length 18 cm. Find its width.
5. A square has area 289 m^2 . Find its side length.
6. A triangular sign has base 2.4 m and height 1.5 m. Find its area.
7. A classroom floor is 8.5 m by 6 m. Find its area.
8. Challenge: A rectangle has area 360 cm^2 and its length is 4 cm more than its width. Find its dimensions.

Answer Key — 2: Area of Rectangles, Squares & Triangles

1. 144 cm^2 .
2. 182.25 m^2 .
3. 99 cm^2 .
4. 12 cm .
5. 17 m .
6. 1.8 m^2 .
7. 51 m^2 .
8. Width 16 cm ; length 20 cm .

Teacher note: Accept equivalent correct methods and clearly shown working.

Worksheet 3: Missing Dimensions & Perimeter/Area Reasoning

Show your working. Include square units for area and ordinary units for perimeter.

1. A rectangle has area 192 cm^2 and width 12 cm. Find its length and perimeter.
2. A square has perimeter 68 m. Find its side length and area.
3. A rectangle is 25 m long and has perimeter 86 m. Find its width and area.
4. A triangle has area 84 cm^2 and base 14 cm. Find its height.
5. A garden has area 450 m^2 and length 30 m. Find its width and perimeter.
6. A rectangle has perimeter 100 cm. One side is 18 cm. Find the other side and area.
7. A square and rectangle have the same perimeter of 48 cm. The rectangle is 16 cm long. Compare their areas.
8. Challenge: A rectangle has area 288 m^2 . Its length is twice its width. Find both dimensions and the perimeter.

Answer Key — 3: Missing Dimensions & Perimeter/Area Reasoning

1. Length 16 cm; perimeter 56 cm.
2. Side 17 m; area 289 m².
3. Width 18 m; area 450 m².
4. Height 12 cm.
5. Width 15 m; perimeter 90 m.
6. Other side 32 cm; area 576 cm².
7. Square area 144 cm²; rectangle area 128 cm²; square is 16 cm² larger.
8. Width 12 m; length 24 m; perimeter 72 m.

Teacher note: Accept equivalent correct methods and clearly shown working.

Worksheet 4: Composite Shapes & Real-Life Areas

Show your working. Include square units for area and ordinary units for perimeter.

1. A shape is made from two non-overlapping rectangles: $12\text{ m} \times 5\text{ m}$ and $7\text{ m} \times 4\text{ m}$. Find the total area.
2. A floor is $10\text{ m} \times 8\text{ m}$. A rectangular section measuring $3\text{ m} \times 2.5\text{ m}$ is removed. Find the remaining area.
3. A garden is a $20\text{ m} \times 14\text{ m}$ rectangle with a $6\text{ m} \times 5\text{ m}$ pond inside it. Find the grass area.
4. A wall is $9\text{ m} \times 3\text{ m}$. Two windows each measure $1.5\text{ m} \times 1.2\text{ m}$. Find the area that needs painting.
5. A large rectangle is $18\text{ cm} \times 12\text{ cm}$. A $6\text{ cm} \times 4\text{ cm}$ rectangle is attached along one full 4 cm side. Find the total area.
6. A path surrounds a rectangular garden measuring $16\text{ m} \times 10\text{ m}$. The path is 2 m wide on every side. Find the area of the whole outer rectangle and the path.
7. A rectangular field is $45\text{ m} \times 30\text{ m}$. A square shed of side 8 m occupies one corner. What area remains for the field?
8. Challenge: A shape consists of a $14\text{ m} \times 9\text{ m}$ rectangle plus a triangle with base 14 m and height 6 m . Find the total area.

Answer Key — 4: Composite Shapes & Real-Life Areas

1. 88 m^2 .
2. 72.5 m^2 .
3. 250 m^2 .
4. 24.84 m^2 .
5. 240 cm^2 .
6. Outer $20 \text{ m} \times 14 \text{ m} = 280 \text{ m}^2$; path = 120 m^2 .
7. $1,286 \text{ m}^2$.
8. 168 m^2 .

Teacher note: Accept equivalent correct methods and clearly shown working.

Worksheet 5: Scale, Units & Area Applications

Show your working. Include square units for area and ordinary units for perimeter.

1. A map scale is $1 \text{ cm} = 4 \text{ m}$. A rectangular garden measures $5 \text{ cm} \times 3.5 \text{ cm}$ on the map. Find its actual dimensions and area.
2. A room is $6 \text{ m} \times 4.5 \text{ m}$. Tiles cover 0.25 m^2 each. How many tiles are needed if there is no waste?
3. A rectangular poster is $80 \text{ cm} \times 50 \text{ cm}$. What is its area in m^2 ?
4. A field has area 0.75 hectares. How many square metres is this? ($1 \text{ hectare} = 10,000 \text{ m}^2$.)
5. A square tile has side 25 cm . How many such tiles are needed to cover a $5 \text{ m} \times 4 \text{ m}$ floor?
6. A rectangle measures $2.5 \text{ m} \times 180 \text{ cm}$. Find its area in m^2 .
7. A farmer has a rectangular plot $60 \text{ m} \times 35 \text{ m}$. He uses $\frac{1}{3}$ of the area for vegetables. What area is left?
8. Challenge: A plan uses a scale of $1 \text{ cm} = 2 \text{ m}$. A playground is drawn as a $9 \text{ cm} \times 6.5 \text{ cm}$ rectangle. A $3 \text{ m} \times 2 \text{ m}$ sandpit is included inside it. What is the remaining playground area?

Answer Key — 5: Scale, Units & Area Applications

1. $20\text{ m} \times 14\text{ m}$; area 280 m^2 .
2. 108 tiles.
3. 0.4 m^2 .
4. $7,500\text{ m}^2$.
5. 320 tiles.
6. 4.5 m^2 .
7. $1,400\text{ m}^2$ remains.
8. Actual $18\text{ m} \times 13\text{ m}$; total 234 m^2 ; remaining 228 m^2 .

Teacher note: Accept equivalent correct methods and clearly shown working.

Worksheet 6: Perimeter & Area Challenge

Show your working. Include square units for area and ordinary units for perimeter.

1. A rectangle has perimeter 120 m. Its length is 10 m greater than its width. Find both dimensions and its area.
2. A rectangular field is $48\text{ m} \times 32\text{ m}$. A 4 m wide path is built inside along all four edges. Find the area of the path.
3. A square and a rectangle both have an area of 144 cm^2 . The square has side 12 cm and the rectangle has length 18 cm. Find the rectangle's width and compare the perimeters.
4. A triangle has area 126 cm^2 and height 14 cm. Its base is then increased by 20%. Find the new area if the height stays the same.
5. A rectangular room is $7.5\text{ m} \times 5.2\text{ m}$. A $1.2\text{ m} \times 0.8\text{ m}$ rug and a $2\text{ m} \times 1.5\text{ m}$ table occupy floor space. What uncovered floor area remains?
6. A garden is $30\text{ m} \times 22\text{ m}$. A $5\text{ m} \times 4\text{ m}$ vegetable patch and two identical $3\text{ m} \times 2\text{ m}$ flower beds are used. What percentage of the garden remains unused? Give your answer to 1 decimal place.
7. A rectangle has area 540 cm^2 . Its length and width are whole numbers and differ by 9 cm. Find the dimensions and perimeter.
8. Challenge: A rectangular park is $50\text{ m} \times 36\text{ m}$. A uniform path of width x is built around the outside. If the outer perimeter is 188 m, find x and the area of the path.

Answer Key — 6: Perimeter & Area Challenge

1. Width 25 m; length 35 m; area 875 m^2 .
2. Outer $48 \times 32 = 1,536 \text{ m}^2$; inner $40 \times 24 = 960 \text{ m}^2$; path = 576 m^2 .
3. Rectangle width 8 cm; rectangle perimeter 52 cm; square perimeter 48 cm; rectangle perimeter is 4 cm greater.
4. New area 151.2 cm^2 .
5. Room 39 m^2 ; occupied 3.96 m^2 ; uncovered 35.04 m^2 .
6. Total 660 m^2 ; used 52 m^2 ; unused $608 \text{ m}^2 = 92.1\%$.
7. Dimensions $27 \text{ cm} \times 20 \text{ cm}$; perimeter 94 cm.
8. Outer dimensions $54 \text{ m} \times 40 \text{ m}$; $x = 2 \text{ m}$; path area = 936 m^2 .

Teacher note: Accept equivalent correct methods and clearly shown working.