

Foundation GCSE: Other Quadrilaterals

Name: _____

Class: _____

Instructions: Answer all questions. Questions are ordered from easiest (1) to hardest (20). Working out should be shown where appropriate.

1. Calculate the perimeter of a parallelogram with sides 8 cm and 5 cm.
2. Calculate the area of a parallelogram with a base of 9 cm and a perpendicular height of 4 cm.
3. Calculate the perimeter of a rhombus with a side length of 11 cm.
4. Calculate the area of a trapezium with parallel sides 6 cm and 10 cm, and a perpendicular height of 5 cm.
5. A parallelogram has an area of 56 cm^2 and a base of 8 cm. Calculate its perpendicular height.
6. A trapezium has an area of 45 cm^2 , a height of 5 cm, and one parallel side of length 7 cm. Calculate the length of the other parallel side.
7. Calculate the perimeter of a kite with side lengths 6 cm and 9 cm.
8. A rhombus has a base of 12 cm and a perpendicular height of 7 cm. Calculate its area.
9. A trapezium has parallel sides of 8 m and 12 m, and a perpendicular height of 6 m. Calculate its area.
10. A parallelogram has a perimeter of 40 cm and a short side of 8 cm. Calculate the length of its long side.
11. Calculate the area of a trapezium with parallel sides 4 cm and 10 cm, and a height of 6 cm.
12. A kite has diagonals of length 10 cm and 14 cm. Calculate its area.
13. A rhombus has diagonals of length 8 cm and 12 cm. Calculate its area.
14. A trapezium has an area of 60 cm^2 , parallel sides of 9 cm and 11 cm. Calculate its perpendicular height.
15. A parallelogram has a length of $(x+4)$ cm and a width of 5 cm. If its perimeter is 38 cm, find the value of x .
16. A trapezium has parallel sides of length x cm and $(x+6)$ cm, a height of 4 cm, and an area of 44 cm^2 . Find the value of x .
17. A field shaped like a parallelogram has a base of 25 m and a height of 12 m. Turf costs 6 per m^2 . Calculate the total cost to turf the field.
18. A decorative garden feature is shaped like a trapezium with parallel sides 3 m and 5 m, and a height of 2.5 m. Calculate its exact area.
19. An algebraic rhombus has a side length of $(2x+3)$ cm. If its perimeter is 52 cm, find the value of x .
20. A trapezium has a top parallel side of 5 cm, a bottom parallel side of 11 cm, and two sloping sides of length 5 cm. Calculate its exact perimeter.

Answers & Worked Solutions

1. $26 \text{ cm} : 2 \times (8 + 5) = 26.$
2. $36 \text{ cm}^2 : 9 \times 4 = 36.$
3. $44 \text{ cm} : 4 \times 11 = 44.$
4. $40 \text{ cm}^2 : \frac{1}{2}(6 + 10) \times 5 = \frac{1}{2} \times 16 \times 5 = 40.$
5. $7 \text{ cm} : 56 \div 8 = 7.$
6. $11 \text{ cm} : (45 \times 2) \div 5 = 18; 18 - 7 = 11.$
7. $30 \text{ cm} : 2 \times (6 + 9) = 30.$
8. $84 \text{ cm}^2 : 12 \times 7 = 84.$
9. $60 \text{ m}^2 : \frac{1}{2}(8 + 12) \times 6 = \frac{1}{2} \times 20 \times 6 = 60.$
10. $12 \text{ cm} : (40 \div 2) - 8 = 12.$
11. $42 \text{ cm}^2 : \frac{1}{2}(4 + 10) \times 6 = \frac{1}{2} \times 14 \times 6 = 42.$
12. $70 \text{ cm}^2 : \frac{1}{2} \times 10 \times 14 = 70.$
13. $48 \text{ cm}^2 : \frac{1}{2} \times 8 \times 12 = 48.$
14. $6 \text{ cm} : (60 \times 2) \div (9 + 11) = 120 \div 20 = 6.$
15. $10 : \text{Perimeter} = 2((x + 4) + 5) = 38 \implies 2(x + 9) = 38 \implies x + 9 = 19 \implies x = 10.$
16. $8 : \text{Area} = \frac{1}{2}(x + x + 6) \times 4 = 44 \implies 2(2x + 6) = 44 \implies 2x + 6 = 22 \implies 2x = 16 \implies x = 8.$
17. $1800 : \text{Area} = 25 \times 12 = 300 \text{ m}^2; \text{Cost} = 300 \times 6 = 1800.$
18. $10 \text{ m}^2 : \frac{1}{2}(3 + 5) \times 2.5 = \frac{1}{2} \times 8 \times 2.5 = 10.$
19. $5 : \text{Perimeter} = 4(2x + 3) = 52 \implies 2x + 3 = 13 \implies 2x = 10 \implies x = 5.$
20. $26 \text{ cm} : \text{Perimeter} = 5 + 11 + 5 + 5 = 26.$