Chapter 9 AREA
Revision Questions and Answers (Mousa Bin Nusair)

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Area of Parallelogram = base x height = b h
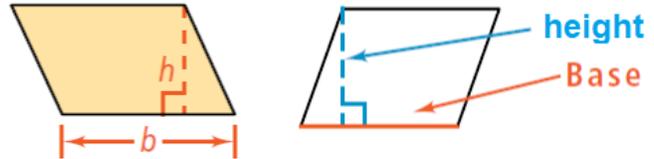
Area of Triangle = $\frac{1}{2}$ x base x height
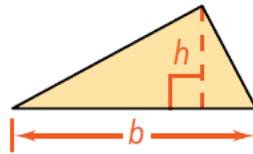
$= \frac{1}{2}$ b h

Area of Trapezoid = $\frac{1}{2}$ x height x (base 1+ base 2)

$= \frac{1}{2}$ h (b_1 + b_2)

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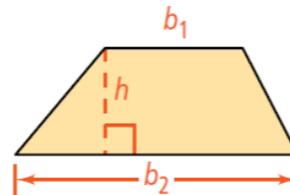
Find the area of each figure.   **Answers:**

1.
12 cm

9 cm

Area of Parallelogram = base x height
= 12 x 9
= 108 cm^2

2.
3.6 m

7 m

Area of Triangle = $\frac{1}{2}$ x base x height
$= \frac{1}{2}$ b h
$= \frac{1}{2}$ x 7 x 3.6
= 12.6 m^2

3.
11 ft

5 ft

4 ft

Area of Trapezoid = $\frac{1}{2}$ x height x (base 1+base 2)
$= \frac{1}{2}$ h (b_1+b_2)
$= \frac{1}{2}$ x 5 x (4 + 11)
= 37.5 ft^2

4.

8 in.

15 in.

Area of Triangle = $\frac{1}{2}$ x base x height

$= \frac{1}{2}$ x 15 x 8

= 60 in²

5.

4 in.

8 in.

Area of Parallelogram = base x height

= 8 x 4

= 32 in²

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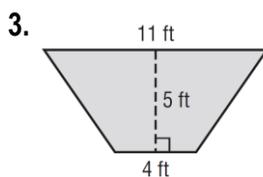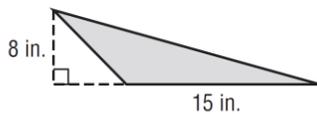
6. Find the height of a parallelogram with an area of 224 square meters and a base of 16 meters.

Area of Parallelogram = base x height

224 = 16 x h

÷ by 16 each side, $\frac{224}{16} = \frac{16\,h}{16}$

14 = h

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7. Find the height of a parallelogram with an area of 300 square yards and a base of 15 yards.

Area of Parallelogram = base x height

300 = 15 x h

÷ by 15 each side, $\frac{300}{15} = \frac{15\,h}{15}$

20 = h

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8. Find the height of a triangle with an area of 245 square inches and a base of 14 inches.

Area of Triangle = $\frac{1}{2}$ x base x height

$245 = \frac{1}{2}$ x 14 x h

245 = 7h

÷ by 7 each side, $\frac{245}{7} = \frac{7\,h}{7}$

h = 35 in

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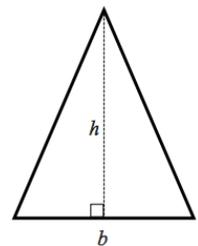
9.   The diagram shows a parallelogram on a centimeter grid. Find it's area.

Area of Parallelogram = base x height

= 4 x 5

= 20
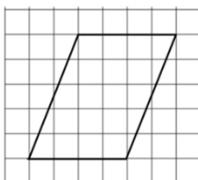
**10.** The diagram shows a logo that is made up of 5 identical parallelograms. Find the area of one parallelogram.

25cm

10cm
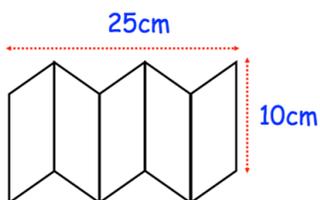
Height of 1 parallelogram = 25 ÷ 5 = 5

Area of Parallelogram = base x height

= 10 x 5

= 50 cm²

11. **Find the area of the parallelogram.**

Area of Parallelogram = base x height

$\qquad$ = 2 x 5

$\qquad$ = 10

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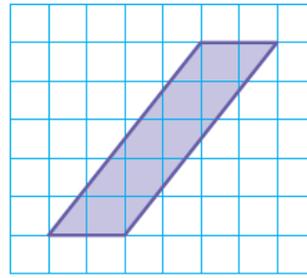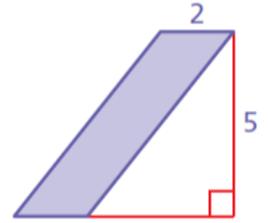
12. **Describe and correct the error in finding the area of the parallelogram.**

Correct Area of Parallelogram = base x height

$\qquad$ = 8 x 13

$\qquad$ = 104 m²

15 m   13 m $A = 8(15)$
$\qquad = 120$ m²

8 m

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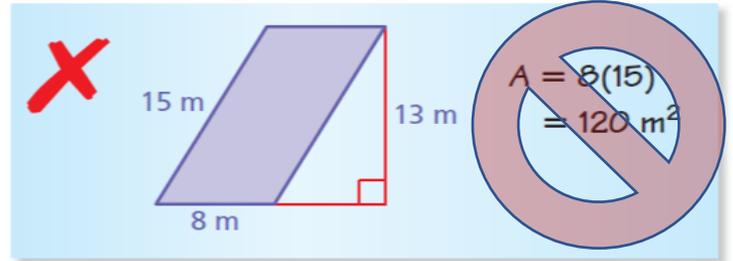
13. Find the Area of a Composite Figure

To find the area of the entire figure, add the areas of the two triangles and the parallelogram.

The area of each triangle is $\frac{1}{2}(3)(4) = 6$.

The area of the parallelogram is $(6)(4) = 24$.

Area of a Composite Figure = 6 +24 +6 = 36 cm²

3 cm

6 cm

4 cm   3 cm

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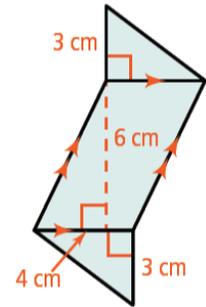
14. **Find the area of the composite figure.**

Area of Rectangle
$A = \ell w$
= 6(4)
= 24

Area of Trapezoid
$A = \frac{1}{2} h(b_1 + b_2)$
$= \frac{1}{2}(2)(4 + 8)$
= 12
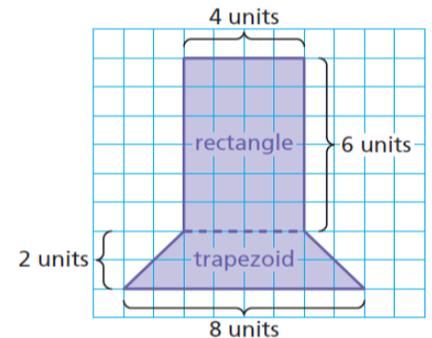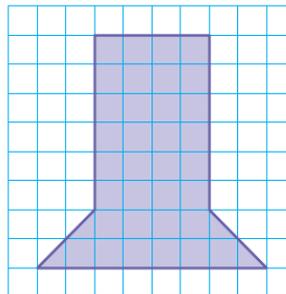
Area of a Composite Figure = 24 +12 = 36

4 units

rectangle   6 units

2 units   trapezoid

8 units

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15. Find the area of the shaded region.

Area of the shaded region = Area of parallelogram – Area of Rectangle

$$= (10 \times 7) - (3 \times 2)$$
$$= 70 - 6$$
$$= 64 \text{ cm}^2$$

2 cm

7 cm   3 cm

10 cm

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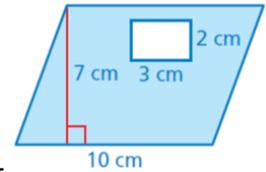
16. Find the area of the shaded region.

Area of the shaded region = Area of Big parallelogram – Area of Small Parallelogram

$$= (8 \times 12) - (4 \times 6)$$

$$= 96 - 24$$

$$= 72 \text{ m}^2$$

12 m

6 m

4 m

8 m

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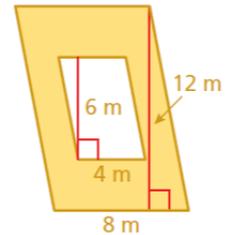
17. The vertices of a quadrilateral are A (2, 4), B (3, 9), C (7, 8), and D (8, 1).
Draw the quadrilateral in a coordinate plane.

$B(3, 9)$
$C(7, 8)$

Plot and label the vertices.

$A(2, 4)$

Connect the points to form the quadrilateral.

$D(8, 1)$

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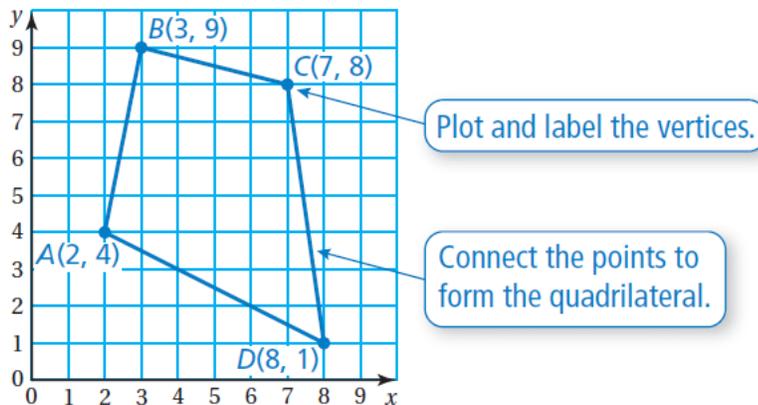
18. The vertices of a rectangle are F (1, 6), G (7, 6), H (7, 2), and J (1, 2).
Draw the rectangle in a coordinate plane and find its perimeter.

The length is the horizontal distance between F (1, 6) and G (7, 6),
which is the difference of the x-coordinates.
length = 7 − 1 = 6 units

The width is the vertical distance between G (7, 6) and H (7, 2),
which is the difference of the y-coordinates.
width = 6 − 2 = 4 units

So, the perimeter of the rectangle is 2(6) + 2(4) = 20 units

$F(1, 6)$ $G(7, 6)$

$J(1, 2)$ $H(7, 2)$
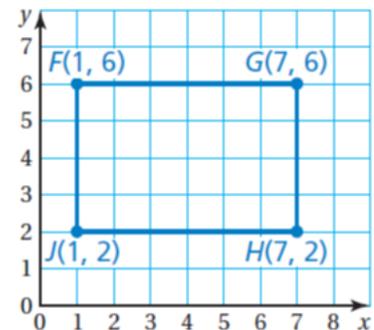
19. In a grid of the exhibits at a zoo, the vertices of the giraffe exhibit are E (0, 90), F (60, 90), G (100, 30), and H (0, 30). The coordinates are measured in feet. What is the area of the giraffe exhibit?

Area of trapezoid $A = \frac{1}{2} h(b_1 + b_2)$

$b_1 = 60 - 0 = 60$

$b_2 = 100 - 0 = 100$

$h = 90 - 30 = 60$

$A = \frac{1}{2} (60)(60 + 100)$

$= \frac{1}{2} (60)(160) = 4800$

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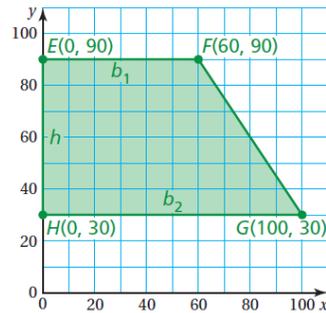
20. Find the area of the trapezoid bag.

Area of trapezoid $A = \frac{1}{2} h(b_1 + b_2)$

$b_1 = 8,$ $b_2 = 12,$ $h = 10$

$A = \frac{1}{2} (10)(8 + 12)$

$= \frac{1}{2} (10)(20) = 100$ in²

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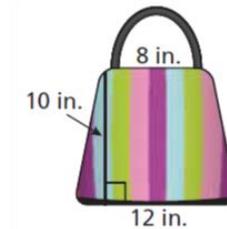
Choose the best option:

1. If the base of parallelogram is 19cm and the height is 11cm then the area of parallelogram is
   A. **209 cm²**   Area of Parallelogram = base x height = 19 x 11 = 209
   B. 105 cm²
   C. 110 cm²
   D. 170 cm²

2. The perimeter of the figure is   Perimeter = 3 + 3 + 2 + 4 = 12
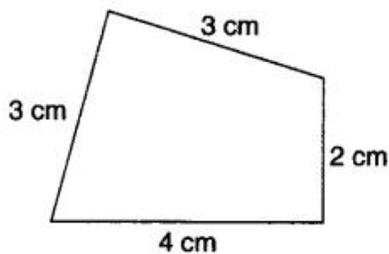
   **A. 12 cm**
   B. 7 cm
   C. 6 cm
   D. 24 cm.

3. Use the picture to answer the question below. What is the area of the parallelogram?

Area of Parallelogram = base x height
= 9 x 4

4 m

9 m
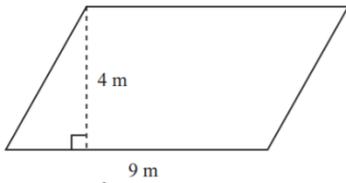
= 36 m²

A. 5 m²
B. 13 m²
C. 26 m²
**D. 36 m²**

4. Which formula finds the area of a trapezoid?

A. $A = \frac{1}{2}h\,(b_1+b_2)$

B. $A=\frac{1}{2}b\,h$

C. $A = b\,h$

D. $A= lw$

5. The area of a parallelogram is 16 square meters. The base of the parallelogram is 8 meters. What is the height, in meters, of the parallelogram?

Area of Parallelogram = base x height
16 = 8 x h
÷ by 8 each side, $\frac{16}{8} = \frac{8\,h}{8}$
2 = h

A. 2
B. 8
C. 24
D. 128

6. Find the area of the following trapezoid.
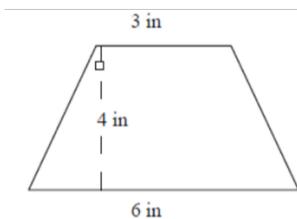
3 in

4 in

6 in

Area of Trapezoid $= \frac{1}{2}$ x height x (base 1+base 2)
$= \frac{1}{2}h\,(b_1+b_2)$
$= \frac{1}{2}$ x 4 x (6 + 3)
= 18 in²

A - Area = 17 square in
B - Area = 18 square in
C - Area = 20 square in
D - Area = 21 square in