

Quiz 8.1-8.4 Study Guide

Part I: Estimating Area

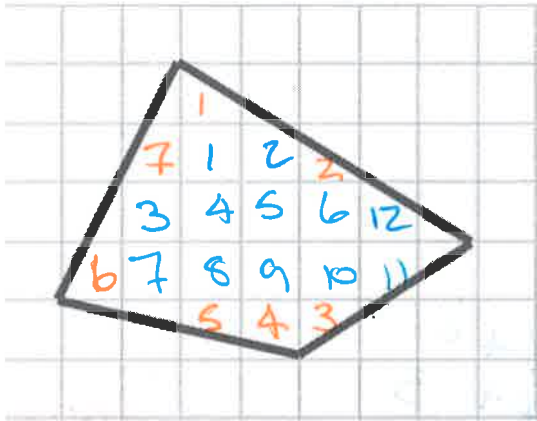
Choose a reasonable estimate for the length of each object.

1. length of a bed: 5 ft or 5 in

2. soccer field: 100 in or 100 yd

Estimate the area of each figure. Each square represents 1 ft². Don't forget the **UNITS!**

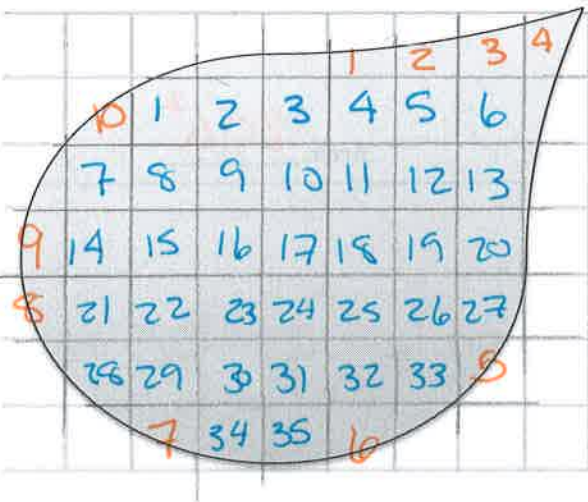
3.



Area: 15.5 square units
15.5 u²

$12 + \frac{1}{2} \cdot 7$
 $12 + 3.5$
about 15.5 square units

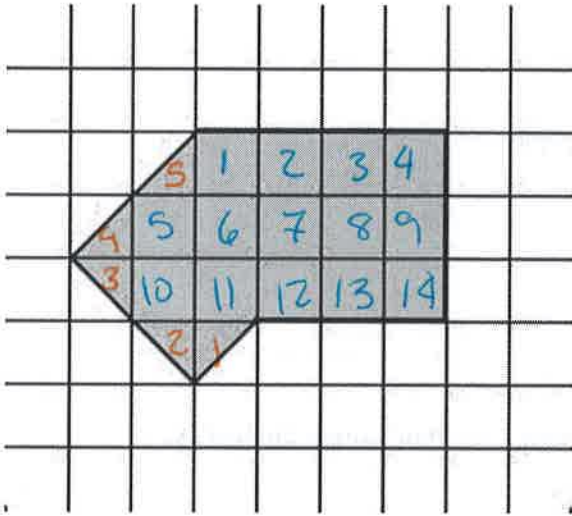
4.



Area: 40u²

$35 + \frac{1}{2} \cdot 10$
 $35 + 5$
about 40 square units.

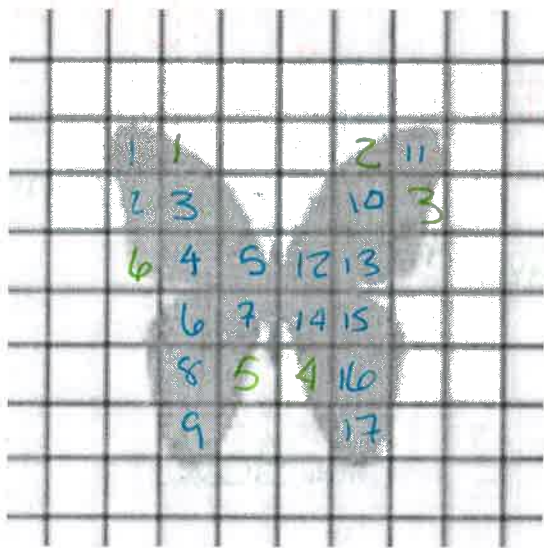
5.



$14 + \frac{1}{2} \cdot 5$
 $14 + 2.5$
 about 16.5 square units

Area: 16.5u²

6.



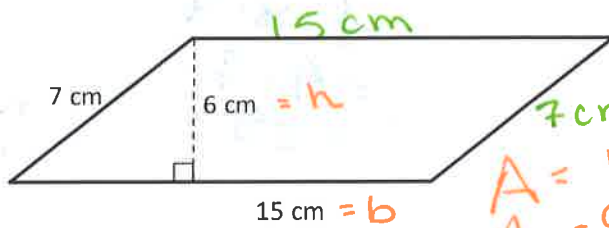
$17 + \frac{1}{2} \cdot 6$
 $17 + 3$
 about 20 square units

Area: 20u²

Part II: Area and Perimeter of Parallelograms and Triangles

Find the **area** and **perimeter** of the figure. Don't forget **UNITS**

7.

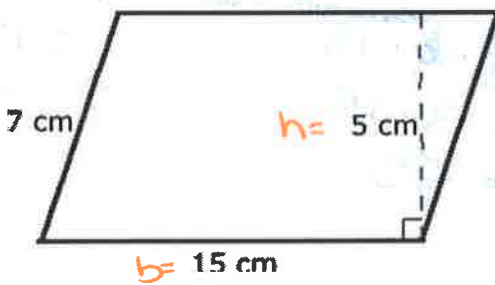


Area 90 cm^2
 Perimeter 44 cm

$A = bh$
 $P = \text{Sum of sides}$
 $P = 2(7 + 15)$
 $P = 2(22)$
 $P = 44$
 $A = 15 \cdot 6$
 $A = 90$

or
 $P = 15 + 7 + 15 + 7$
 $= 22 + 15 + 7$
 $= 22 + 22$
 $= 44$

8.



Area 75 cm^2
 Perimeter 44 cm

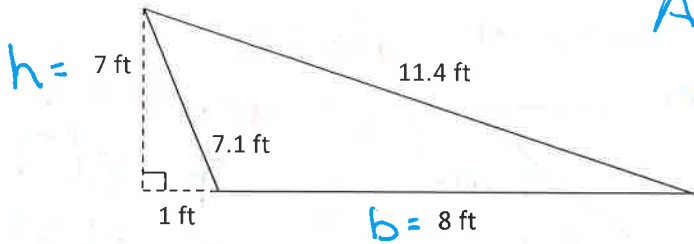
$A = bh$
 $A = 15 \cdot 5$
 $A = 75 \text{ cm}^2$
 $P = 2(7 + 15)$
 $= 2(22)$
 $= 44$

9. Find the area for a parallelogram with $b = 8 \text{ ft}$ and $h = 3 \text{ ft}$

$A = b \cdot h$
 $A = 8 \cdot 3$
 $A = 24$

Area = 24 ft^2

10. Use the figure below to find the **area** and **perimeter**. Don't forget **UNITS**



$$A = \frac{1}{2}bh$$

$$= \frac{1}{2} \cdot 8 \cdot 7$$

$$= 4 \cdot 7$$

$$= 28$$

$P = \text{Sum of all sides of the } \Delta$

$$P = 7.1 + 11.4 + 8$$

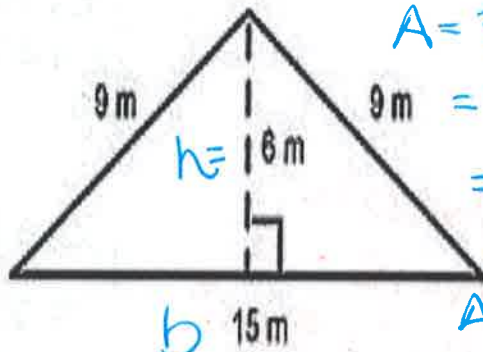
$$= 11.4 + 7.1 + 8.0$$

$$= 26.5$$

Area 28 ft²

Perimeter 26.5 ft

11.



$$A = \frac{1}{2}bh$$

$$= \frac{1}{2} \cdot 15 \cdot 6$$

use commutative

$$= \frac{1}{2} \cdot 6 \cdot 15$$

$$= 3 \cdot 15$$

$$A = 45$$

$P = \text{Sum of the sides.}$

$$P = 9 + 9 + 15$$

$$= 18 + 15$$

$$P = 33$$

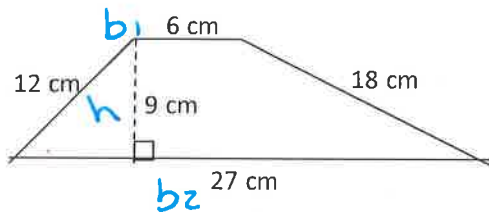
Area = 45 m²

Perimeter 33 m

Part III: Area and Perimeter of Trapezoids and Other Figures

Find the **area** and **perimeter** of the figure. Don't forget **UNITS**

12.



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

$$A = \frac{1}{2} \cdot 9(6 + 27)$$

$$= \frac{1}{2} \cdot 9 \cdot 33$$

$$= 4.5 \cdot 33$$

$$= 148.5$$

Area 148.5 cm²

Perimeter 63 cm

$$P = 12 + 6 + 18 + 27$$

$$= 18 + 18 + 27$$

$$= 36 + 27$$

$$= 63$$

13. Find the area of a trapezoid with $b_1 = 3\text{m}$, $b_2 = 7\text{m}$ and $h = 3\text{m}$

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

$$A = \frac{1}{2} \cdot 3(3 + 7)$$

$$A = \frac{1}{2} \cdot 3 \cdot 10$$

↔
Use commutative

$$A = \frac{1}{2} \cdot 10 \cdot 3$$

$$A = 5 \cdot 3$$

$$A = 15$$

Area = 15 m²

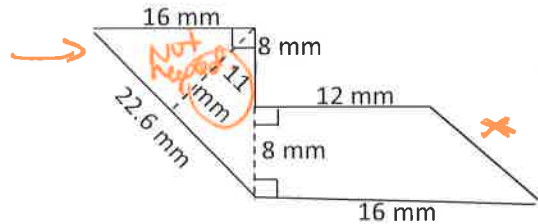
14. Use the figure below to find the area and perimeter. Don't forget UNITS

$$A_{\Delta} = \frac{1}{2}bh$$

$$= \frac{1}{2} \cdot 16 \cdot 16$$

$$= 8 \cdot 16$$

$$A_{\Delta} = 128$$



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

$$= \frac{1}{2} \cdot 8(12 + 16)$$

$$= \frac{1}{2} \cdot 8 \cdot 28$$

$$= 4 \cdot 28$$

$$= 112$$

Area 240 mm²

Perimeter _____

$$A_{\Delta} + A_{\text{trapezoid}} = 128$$

$$\underline{+ 112}$$

$$240$$

$$P = 22.6 + 16 + 8 + 12 + x + 16$$

