



Warm Up Grade 7

Nov. 30, 2023



Use Mental Math:

1.  $15 \times 7 \times 2 \times 3 =$

$$\underline{30} \times \underline{21}$$

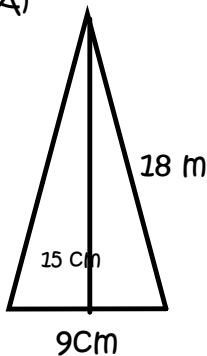
$$630$$

2.  $90 - 31 = 59$

3. ~~45%~~ of 60 =

Find the Area for each of the following triangles:

A)



$$b = 9 \text{ cm}$$

$$h = 15 \text{ cm}$$

$$A_{\Delta} = ?$$

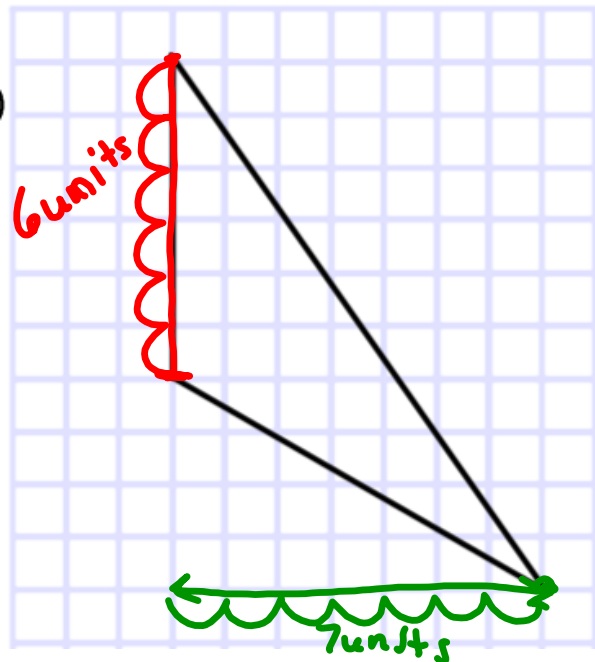
$$A_{\Delta} = \frac{b \times h}{2}$$

$$= \frac{9 \text{ cm} \times 15 \text{ cm}}{2}$$

$$= \frac{135 \text{ cm}^2}{2}$$

$$A_{\Delta} = 67.5 \text{ cm}^2$$

b)



$$b = 6$$

$$h = 7$$

$$A_{\Delta} = ?$$

$$A_{\Delta} = \frac{b \times h}{2}$$

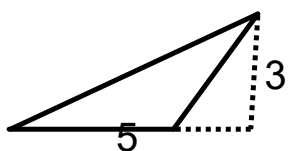
$$= \frac{6 \times 7}{2}$$

$$= \frac{42 \text{ unit}^2}{2}$$

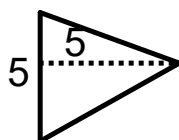
$$= 21 \text{ units}^2$$

### Homework Solutions

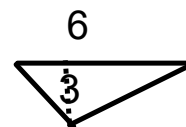
Homework Solutions Page 145 -146 # 1, 2, 4



$$\begin{aligned}
 1a) \quad A &= \frac{b \times h}{2} \\
 &= \frac{5 \text{ cm} \times 3 \text{ cm}}{2} \\
 &= \frac{15 \text{ cm}^2}{2} \\
 &= 7.5 \text{ cm}^2
 \end{aligned}$$



$$\begin{aligned}
 1b) \quad A &= \frac{b \times h}{2} \\
 &= \frac{5 \text{ cm} \times 5 \text{ cm}}{2} \\
 &= \frac{25 \text{ cm}^2}{2} \\
 &= 12.5 \text{ cm}^2
 \end{aligned}$$

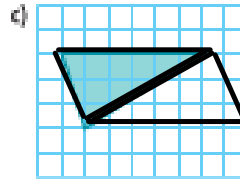
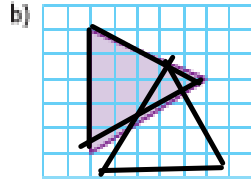
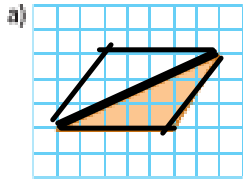


$$\begin{aligned}
 1c) \quad A &= \frac{b \times h}{2} \\
 &= \frac{6 \text{ cm} \times 3 \text{ cm}}{2} \\
 &= \frac{18 \text{ cm}^2}{2} \\
 &= 9 \text{ cm}^2
 \end{aligned}$$

pg. 145 # 1-8

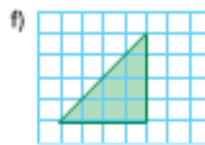
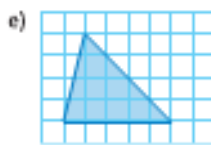
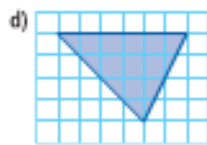
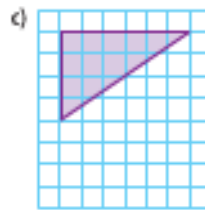
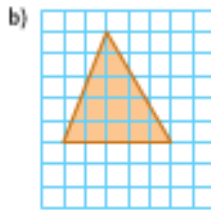
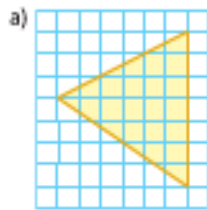
Homework Solutions

1. Copy each triangle on 1-cm grid paper. Draw a related parallelogram.



2. Each triangle is drawn on 1-cm grid paper.

Find the area of each triangle. Use a geoboard if you can.



$$\begin{aligned} a) A &= \frac{b \times h}{2} \\ &= \frac{7 \times 4}{2} \\ &= \frac{28}{2} \\ &= 14 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} b) A &= \frac{b \times h}{2} \\ &= \frac{5 \times 5}{2} \\ &= \frac{25}{2} \\ &= 12.5 \text{ cm}^2 \end{aligned}$$

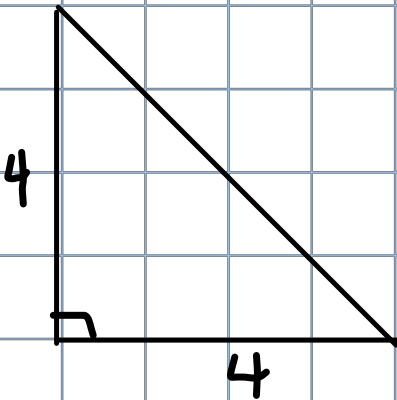
$$\begin{aligned} c) A &= \frac{b \times h}{2} \\ &= \frac{6 \times 4}{2} \\ &= \frac{24}{2} \\ &= 12 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} d) A &= \frac{b \times h}{2} \\ &= \frac{6 \times 4}{2} \\ &= \frac{24}{2} \\ &= 12 \text{ cm}^2 \end{aligned}$$

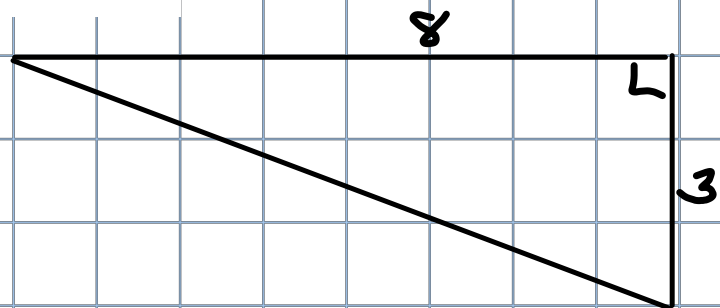
$$\begin{aligned} e) A &= \frac{b \times h}{2} \\ &= \frac{5 \times 4}{2} \\ &= \frac{20}{2} \\ &= 10 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} f) A &= \frac{b \times h}{2} \\ &= \frac{4 \times 4}{2} \\ &= \frac{16}{2} \\ &= 8 \text{ cm}^2 \end{aligned}$$

3. Draw two right triangles on 1-cm grid paper.
- Record the base and the height of each triangle.
  - What do you notice about the height of a right triangle?
  - Find the area of each triangle you drew.

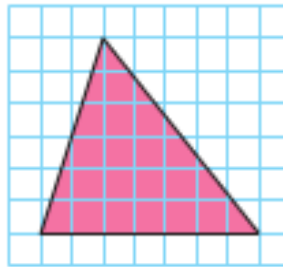


$$\begin{aligned} A &= \frac{b \times h}{2} \\ &= \frac{4 \times 4}{2} \\ &= \frac{16}{2} \\ &= 8 \text{ cm}^2 \end{aligned}$$

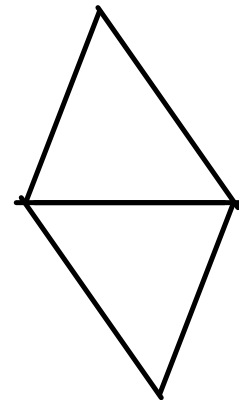
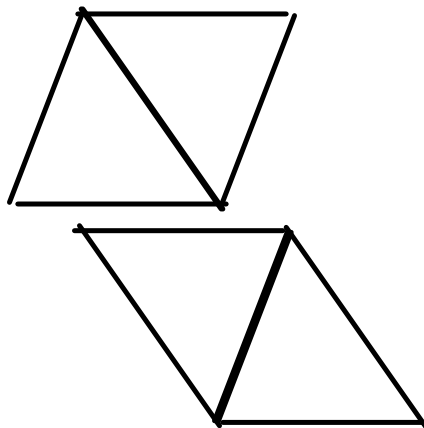


$$\begin{aligned} A &= \frac{b \times h}{2} \\ &= \frac{8 \times 3}{2} \\ &= \frac{24}{2} \\ &= 12 \text{ cm}^2 \end{aligned}$$

4. a) Find the area of this triangle.  
 b) Use 1-cm grid paper.  
 How many different parallelograms can you draw that have the same base and the same height as this triangle? Sketch each parallelogram.  
 c) Find the area of each parallelogram.  
 What do you notice?



$$\begin{aligned}
 a) \quad A &= \frac{b \times h}{2} \\
 &= \frac{6 \times 4}{2} \\
 &= \frac{24}{2} \\
 &= 12 \text{ cm}^2
 \end{aligned}$$

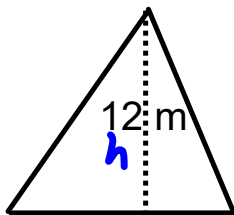


c) The area of each parallelogram is  $42 \text{ cm}^2$

$$\text{Area of Triangle} = \frac{\text{Base} \times \text{Height}}{2}$$

Find the base length of the triangle.

$$\text{Area} = 66 \text{ m}^2$$



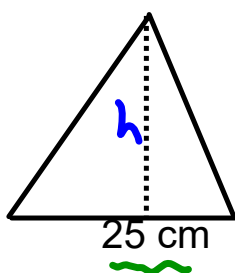
$$\begin{aligned} b_{\Delta} &= \frac{2A}{h} \\ &= \frac{2(66\text{m}^2)}{(12\text{m})} \\ &= \frac{132\text{m}^2}{12\text{m}} \\ &= 11\text{m} \end{aligned}$$

A diagram showing a rectangle formed by dashed lines and stars at the corners. Inside the rectangle, the formula "Base =  $\frac{2 \times \text{Area}}{\text{Height}}$ " is written.

$$\text{Area of Triangle} = \frac{\text{Base} \times \text{Height}}{2}$$

Find the ~~base~~ height of the triangle.

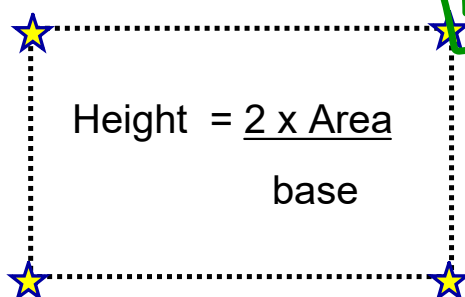
$$\text{Area} = 37.5 \text{ cm}^2$$



$$h = \frac{2A}{b}$$
$$= \frac{2(37.5)}{(25)}$$

$$\frac{75 \text{ cm}^2}{25 \text{ cm}}$$

$$h = 3 \text{ cm}$$



# Class / Homework

Page 146 - 147

#5<sup>c</sup>, #6(Sketch) #7<sup>c</sup>(Sketch) ~~#7~~, c, #8, ~~#8~~

$$8a) \begin{array}{l} b=5 \\ h=2 \end{array} \quad A_{\Delta} = \frac{b \times h}{2}$$

$$\text{Redo} \begin{array}{l} b=10 \\ h=2 \end{array} \quad A_{\Delta} = \frac{b \times h}{2}$$

Test on the first half of Unit 4  
(Up and including page 152)  
on Thursday.

Dec 5 (Tuesday)





$$2a. \quad A = \frac{b \times h}{2}$$

$$A = \frac{7 \times 6}{2}$$

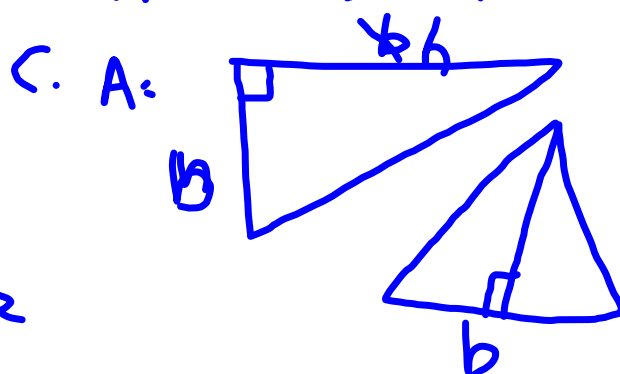
$$A = \frac{42}{2}$$

$$A = 21 \text{ cm}^2$$

$$b. \quad A = \frac{5 \times 5}{2}$$

$$A = \frac{25}{2}$$

$$A = 12.5 \text{ cm}^2$$

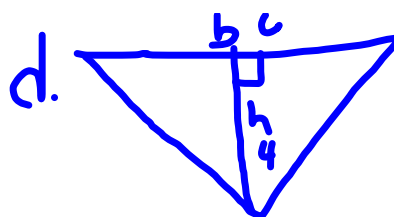


$$c. \quad A = \frac{b \times h}{2}$$

$$A = \frac{6 \times 4}{2}$$

$$A = \frac{24}{2}$$

$$A = 12 \text{ cm}^2$$



$$A = \frac{6 \times 4}{2}$$

$$A = 12 \text{ cm}^2$$

$$e. A = \frac{5 \times 4}{2}$$

$$A = \frac{20}{2}$$

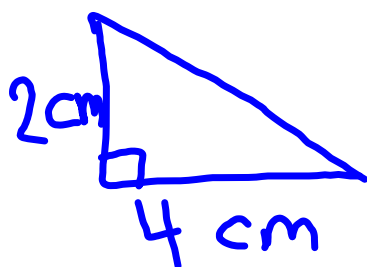
$$A = 10 \text{ cm}^2$$

$$A = \frac{b \times h}{2}$$

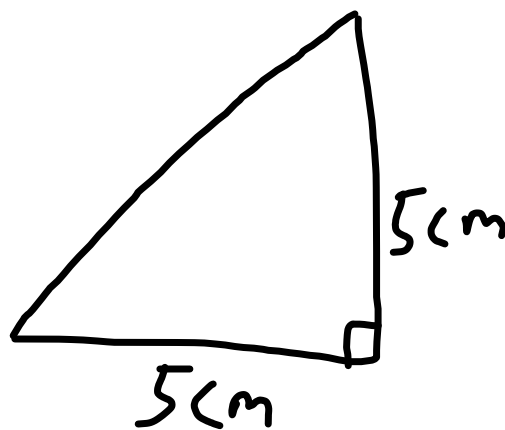
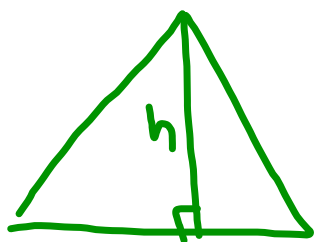
$$A = \frac{1}{2} b \times h$$

$$f. A = \frac{4 \times 4}{2}$$

$$A = 8 \text{ cm}^2$$

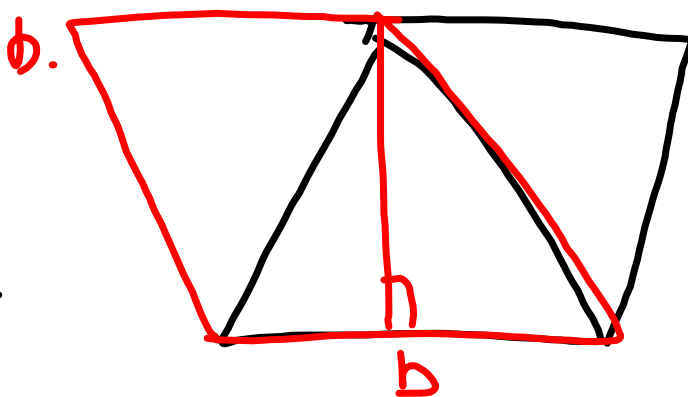


$$\begin{aligned} A &= \frac{b \times h}{2} \\ &= \frac{4 \times 2}{2} \\ &= \frac{8}{2} \\ &= 4 \text{ cm}^2 \end{aligned}$$



$$\begin{aligned} A &= \frac{B \times H}{2} & A &= 12.5 \text{ cm}^2 \\ &= \frac{5 \times 5}{2} \\ &= \frac{25}{2} \end{aligned}$$

$$4a \quad A = \frac{b \times h}{2}$$
$$A = \frac{7 \times 6}{2}$$
$$A = \frac{42}{2}$$
$$A = 21 \text{cm}^2$$



c.

$$A = b \times h$$
$$A = 6 \times 7$$
$$A = 42 \text{cm}^2$$

$$S_a = A = 18 \text{ cm}^2$$

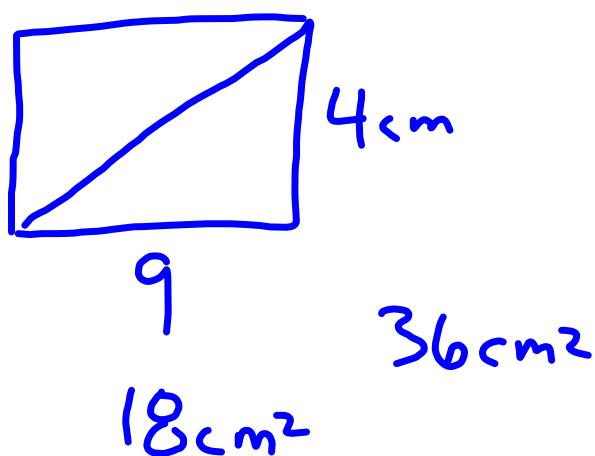
$$b = 9 \text{ cm}$$

$$A = \frac{b \times h}{2}$$

$$(2 \times) 18 = \frac{9 \times h}{2} (2 \times)$$

$$36 = 9 \times h$$

$$4 \text{ cm} = h$$



$$b. \quad A = 32$$

$$h = 4$$

$$A = \frac{b \times h}{2}$$

$$32 = \frac{b \times 4}{2}$$

$$64 = b \times 4$$

$$16_m = b$$

$$C.A. = 480m^2 \quad (32m)$$

$$b = 30m$$

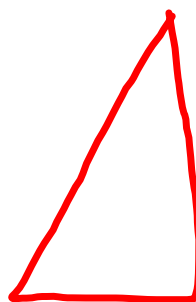
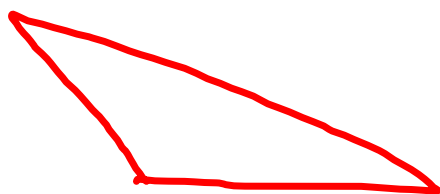
$$480m^2 = \frac{b \times h}{2}$$

$$960m^2 = 30 \times h$$

$$32m = h$$



6a. i)  $6\text{cm}^2$   
ii)  $6\text{cm}^2$   
iii)  $6\text{cm}^2$



7. a)  $2b \times 14h$   
b)  $2b \times 10h$   
c)  $2b \times 8h$