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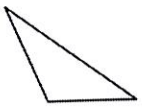
5·3·3 What if I add to the shape?

Area of a Triangle

5-85

5-85 AREA CHALLENGE — TRIANGLES: Think about how you might find tne area of the obtuse triangle shown at right.

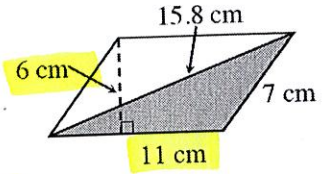


With two copies of this triangle, what shape could you make by putting the copies together? Let's find out!

- Get a set of triangles from the Resource Page.
- Carefully cut out the triangles by cutting along the sides of the figures.
- Look for any triangles that match in size and shape.
- Work with your team to combine the two triangles into four-sided shapes (such as rectangles or parallelograms).
- **Sketch or glue the shapes that you create on your notebook paper.**

★ Two be A or a

5-86 Darla created the shape at right out of two triangles and has measured and labeled some of the lengths.



a) How could she find the area of the entire parallelogram? (The white AND shaded areas)

b) What is the area of just the shaded triangle?

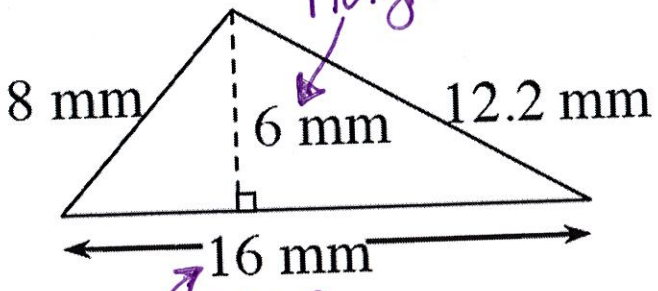
c) Using this method for find the area of a triangle, write a formula that could be used to find the area of any triangle.

5-86

a) b

b) c d

5-112 Find the area of the triangle below. Think carefully about which measurements to use for the base and the height.



$A = \frac{1}{2} \cdot 16 \cdot 6$

$A = 8 \cdot 6$

$A = 48 mm^2$

c) Area of a Triangle $= \frac{1}{2}bh$ OR $\frac{bh}{2}$

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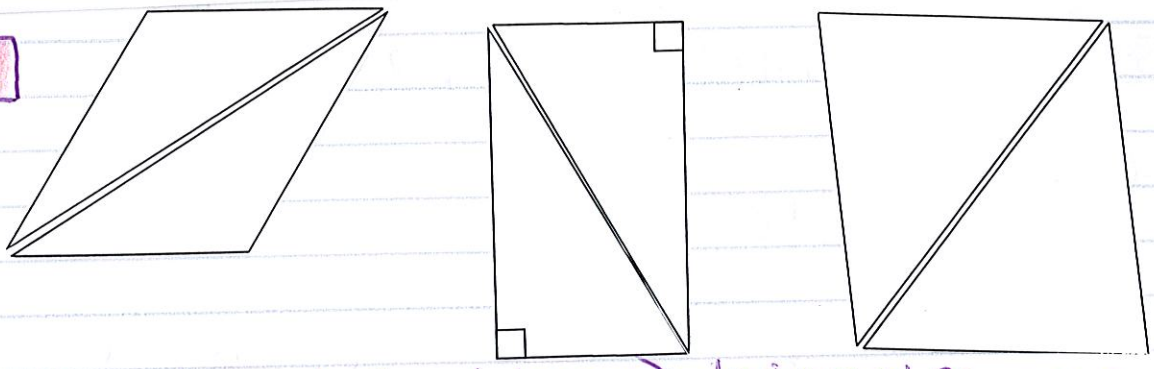
5-85



* Two identical (matching) triangles can be put together to form a rectangle or a parallelogram.

$A = bh$

5-86

a) Daria could multiply the base (11 cm) by height (16 cm).

$16 \times 11 = \boxed{176\ cm^2}$

b) The shaded triangle is half, so she could divide $176\ cm^2$ by 2 to get just the shaded part.

$$2\overline{)176} = \boxed{33\ cm^2}$$

$$\begin{array}{r} 33 \\ 2\overline{)176} \\ -6\downarrow \\ \hline 07 \\ -6 \\ \hline 16 \\ -16 \\ \hline 0 \end{array}$$

c) Area of a Triangle $= \frac{1}{2}bh$ OR $\frac{bh}{2}$