Area of a Triangle 2

7a. Sadia is thinking of a triangle.



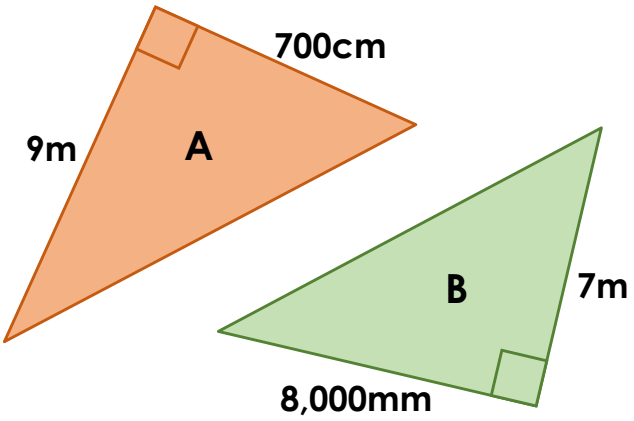
My triangle has an area greater than 0.6m² but less than 6,100cm². Its height is equal to its base.

$$\text{area} = \frac{\text{base} \times \text{height}}{2}$$

Draw and label Sadia's triangle in cm.
Find the area using the formula above.

GD PS

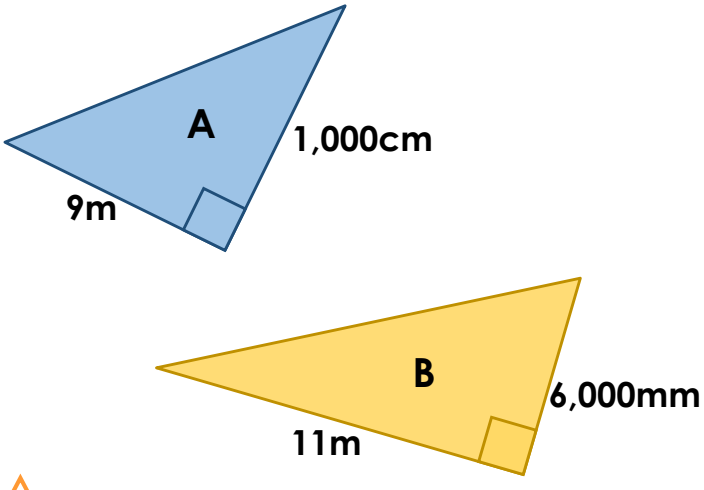
8a. Cory thinks the area of triangle B is larger than the area of triangle A.



Is Cory correct? Use a formula to prove it.

GD *not to scale* R

9a. Calculate the difference between the area of these 2 triangles.



GD *not to scale* PS

Area of a Triangle 2

7b. Brogan is thinking of a triangle.



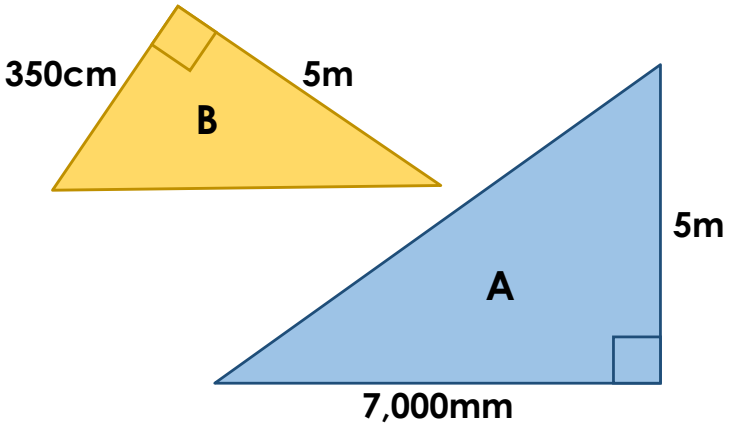
My triangle has an area less than 1,500mm² but more than 13cm². Its base is three times as long as its height.

$$\text{area} = \frac{\text{base} \times \text{height}}{2}$$

Draw and label Brogan's triangle in mm.
Find the area using the formula above.

GD PS

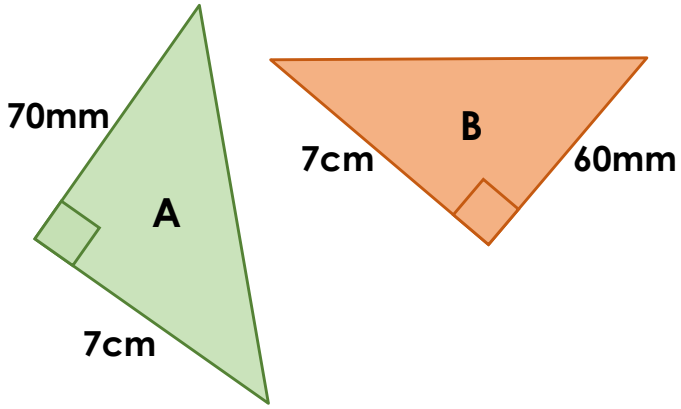
8b. Penn thinks the area of triangle B is half the area of triangle A.



Is Penn correct? Use a formula to prove it.

GD *not to scale* R

9b. Calculate the difference between the area of these 2 triangles.



GD *not to scale* PS

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Reasoning and Problem Solving
Area of a Triangle 2

Developing

1a. Example answer: height = 10cm; base = 5cm; area = 25cm²

2a. Mia is correct because A = 10cm² and B = 5cm². A is twice as big as B.

3a. A = 7cm x 12cm = 84cm², 84cm² ÷ 2 = 42cm²
B = 10cm x 8cm = 80cm², 80cm² ÷ 2 = 40cm²
42cm² – 40cm² = 2cm²

Expected

4a. Various answers, for example: height = 70cm; base = 20cm; area = 700cm²

5a. Abby is correct because A = 24cm² and B = 27cm². 27cm² is larger than 24cm².

6a. A = 3cm x 8cm = 24cm², 24cm² ÷ 2 = 12cm²
B = 4cm x 9cm = 36cm², 36cm² ÷ 2 = 18cm²
18cm² – 12cm² = 6cm²

Greater Depth

7a. Various answers, for example: height = 110cm; base = 110cm; area = 6,050cm²

8a. Cory is incorrect because A = 31.5m² and B = 28m². 31.5m² is larger than 30m².

9a. A = 9m x 10m = 90m², 90m² ÷ 2 = 45m²
B = 11m x 6m = 66m²; 66m² ÷ 2 = 33m²
45m² – 33m² = 12m²

Reasoning and Problem Solving
Area of a Triangle 2

Developing

1b. Example answer: height = 6cm; base = 9cm; area = 27cm²

2b. Matt is correct because A = 44cm² and B = 36cm². 44cm² is larger than 36cm².

3b. A = 12cm x 5cm = 60cm², 60cm² ÷ 2 = 30cm²
B = 9cm x 6cm = 54cm², 54cm² ÷ 2 = 27cm²
30cm² – 27cm² = 3cm²

Expected

4b. Various answers, for example: height = 12cm; base = 12cm; area = 72cm²

5b. Mo is correct because A = 18cm² and B = 6cm². 6cm² x 3 = 18cm².

6b. A = 6cm x 12cm = 72cm², 72m² ÷ 2 = 36cm²
B = 7cm x 12cm = 84cm², 84cm² ÷ 2 = 42cm²
42cm² – 36²cm = 6cm²

Greater Depth

7b. Various answers, for example: height = 30mm; base = 90mm; area = 1,350mm²

8b. Penn is correct because A = 17.5m² and B = 8.75m². 8.75m² is half of 17.5m².

9b. A = 7cm x 7cm = 49cm², 49cm² ÷ 2 = 24.5cm²
B = 7cm x 6cm = 42cm², 42cm² ÷ 2 = 21cm²
24.5cm² – 21cm² = 3.5cm²

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