Area of a Triangle 1

7a. Use squared paper to draw 3 triangles which each have a different area.

Imagine each square is worth $2cm^2$.

Create three questions about the area of the triangles.

Remember to include answers.

GD

PS

Area of a Triangle 1

7b. Use squared paper to draw 3 triangles where 2 have the same area.

Imagine each square is worth $3cm^2$.

Create three questions about the area of the triangles.

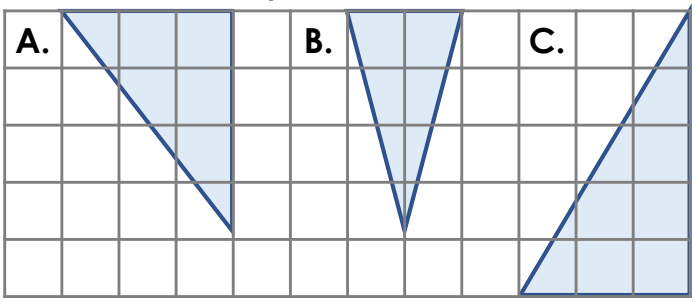
Remember to include answers.

GD

PS

8a. Ali has estimated the area of these triangles by counting the squares.

1 square = $3cm^2$



A = $6cm^2$ B = $4cm^2$ C = $7.5cm^2$

Do you agree with his estimations? Explain why.

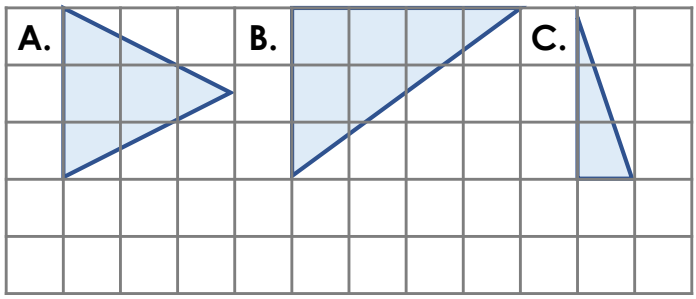
GD

Not to scale

R

8b. Lily has estimated the area of these triangles by counting the squares.

1 square = $2cm^2$



A = $13.5cm^2$ B = $18cm^2$ C = $4.5cm^2$

Do you agree with her estimations? Explain why.

GD

Not to scale

R

9a. Bella is drawing a triangle.

She says,



My triangle has an area of $18cm^2$. One of its sides is 12cm long.

Use squared paper to draw triangles with the same properties as Bella's. Imagine each square is worth $2cm^2$.

GD

PS

9b. Alfie is drawing a triangle.

He says,



My triangle has an area of $30cm^2$. One of its sides is 15cm long.

Use squared paper to draw triangles with the same properties as Alfie's. Imagine each square is worth $3cm^2$.

GD

PS

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Reasoning and Problem Solving
Area of a Triangle 1

Developing

1a. Various answers, for example:
Which triangle has the smallest area? (A)

2a. Various answers, for example:
No because although he has estimated triangle B correctly, he has only counted one square for triangle A, despite there being more than 1.

3a. Accept any right-angled triangle, with an accurate area of $4cm^2$.

Expected

4a. Various answers, for example:
Which triangle has the largest area? (A); Order the triangles from the smallest area to the largest. (C, B, A); What similarities and differences do you notice about the triangles? (B and C are right-angled triangles, A is an isosceles triangle)

5a. Various answers, for example:
No because although he has estimated triangle A and B correctly, his estimation for triangle C is too low; it has an area closer to $8cm^2$, not $6cm^2$.

6a. Accept any triangles with an accurate area of $12cm^2$.

Greater Depth

7a. All triangles must have a different area. Three questions with an answer.

8a. Various answers, for example:
No because he has not multiplied the total squares by 3; they need to be multiplied because each square is worth $3cm^2$, not $1cm^2$. His estimations should be:
A = $18cm^2$, B = $12cm^2$, C = $22.5cm^2$.

9a. Accept any triangles with at least one side which is 12cm long, and an accurate area of $12cm^2$ (where each square represents $2cm^2$).

Reasoning and Problem Solving
Area of a Triangle 1

Developing

1b. Various answers, for example:
What is the difference between the area of the triangles? ($4.5cm^2$)

2b. Various answers, for example:
No because although she has estimated triangle A correctly, her estimation for triangle B is too high; it has an area closer to $8cm^2$, not $10cm^2$.

3b. Accept any right-angled triangle, with an accurate area of $6cm^2$.

Expected

4b. Various answers, for example:
Which triangle has an area of $4.5cm^2$? (C); What is the difference in area between triangle A and triangle B? ($6cm^2$); What is the total area of all three triangles? ($18.5cm^2$)

5b. Various answers, for example:
I agree with Ellie's estimations because all of her estimations are either correct, or close to being correct; triangle A has an actual area of $6cm^2$, so her estimation is only $0.5cm^2$ over.

6b. Accept any triangles with an accurate area of $16cm^2$.

Greater Depth

7b. All triangles must have a different area. Three questions with an answer.

8b. Various answers, for example:
Nom because she has multiplied the total squares by 3 instead of 2; each square is worth $2cm^2$, not $3cm^2$. Her estimations should be: A = $9cm^2$, B = $12cm^2$, C = $3cm^2$.

9b. Accept any triangles with at least one side which is 15cm long, and an accurate area of $30cm^2$ (where each square represents $3cm^2$).

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