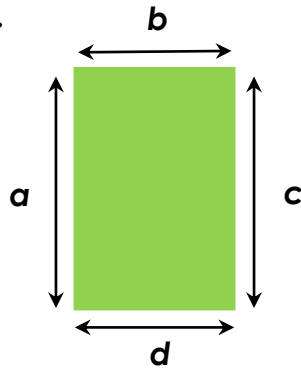**Week 16**

Wednesday 8th July 2020

Year 5 Using Formulae - Reasoning and Problem Solving

*As Algebra is mainly a year 6 objective, you only have to complete **D** and **E.**

You can review how to use a formula using this link:
https://www.youtube.com/watch?v=MMjI_c2EJU0

Formulae

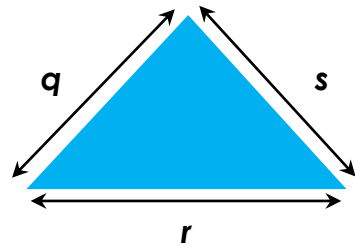**1a. Write a formula for the perimeter of the shape.**

b

a   *c*

d

Use your formula to work out the perimeter if a = 9cm, c = 9cm, b = 2cm and d = 2cm.

Not to scale

1b. Write a formula for the perimeter of the shape.

q   *s*

r

Use your formula to work out the perimeter if q = 3cm, s = 3cm and r = 4cm.

Not to scale

2a. Here is a formula for the amount of wood to buy when building a shed (S).

$$S = 2 \times w$$

Hamish needs a shed 6m wide (w). He has 20m of wood.

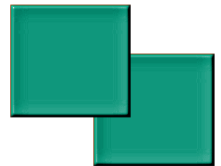**Does Hamish have enough wood? Convince me!**

2b. Here is a formula for the amount of tiles needed to cover a wall (T).

$$T = w \times 2$$

A wall is 14m wide (w). Lucie has 24 tiles to cover the wall.

Does Lucie have enough tiles? Convince me!

3a. Cleaning fluid (c) is made up of 5 cups of water (w) and 2 cups of bleach (b).

Which formula represents this?

A. c = 5w + 2b

B. c = 5 + w + 2 + b

Explain how you know.

3b. Tomato feed (f) is made up of 6 cups of water (w) and 1 cup of plant food (p).
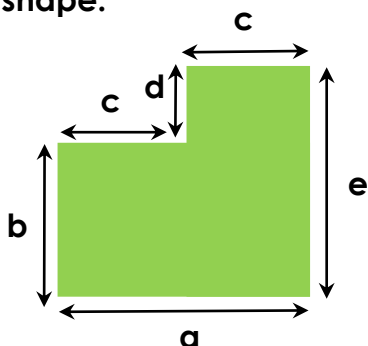
Which formula represents this?

A. f = 1w + 6p

B. f = 6w + 1p

Explain how you know.

Formulae

4a. Write a formula for the perimeter of the shape.	**4b.** Write a formula for the area of the shape.

Use your formula to work out the perimeter if a = 10cm, b = 6cm, c = 4cm, d = 3cm and e = 8cm.
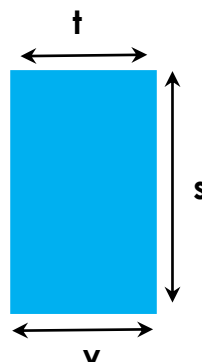
☆ E   *Not to scale*

Use your formula to work out the area if s = 9m, t = 6m and v = t.

☆ E   *Not to scale*

5a. Here is a formula for the amount of paint needed (P) to paint a wall.

$$P = w \times 50ml$$

A wall is 13m wide (w). Deni has 650ml of paint.

Does Deni have enough paint? Convince me!

☆ E

5b. Here is a formula for the amount of pet food (F) needed over 2 months.

$$F = w \times m$$

A puppy weighs 6kg (w) and is 8 months old (m). His owner plans to feed him 40kg of food over the next 2 months.

Does his own have enough pet food? Convince me!

☆ E

6a. The formula for calculating speed (s) is distance (d) divided by time (t).

Which two formulae represent this?

A. $s = d \div t$

B. $s = t \div d$

C. $s = \dfrac{d}{t}$

Explain how you know.

☆ E

6b. The formula for calculating the area of a triangle (a) is base (b) multiplied by height (h), divided by 2.

Which two formulae represent this?

A. $a = 2 \div b \times h$

B. $a = (b \times h) \div 2$

C. $a = \dfrac{(b \times h)}{2}$

Explain how you know.

☆ E