GCSE FOUNDATION · REVISION MAT 4

Comparing lengths, areas and volumes

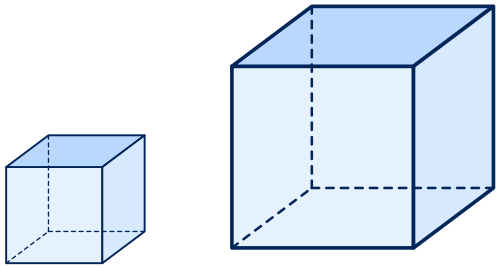
1 Square A has sides 5 cm.
Square B has sides 10 cm.

Write in its simplest form

(a) the ratio of their perimeters

(b) the ratio of their areas

2 Cube A has edges 2 cm.
Cube B has edges 6 cm.



Write the ratio of their volumes in its simplest form.

3 Esme says,

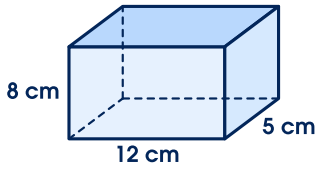
"If you multiply all the sides of a square by 4, its area is multiplied by 4."

Explain why Esme is wrong.

4 Rectangle A is 5 cm by 2 cm.
Rectangle B is 15 cm by 6 cm.

Show that the ratio of their areas is 1 : 9

5 A small box is 12 cm by 8 cm by 5 cm.



A large box has every length 2 times as long.

(a) Work out the volume of the large box.

(b) How many times bigger is its volume?

6 A rectangle is 8 cm by 4 cm.

A square has the same perimeter as the rectangle.

Write the ratio area of rectangle : area of square in its simplest form.

Mr&Mrs MATHS

ANSWERS · REVISION MAT 4

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1 (a) 20 : 40 = **1 : 2**

(b) 25 : 100 = **1 : 4**

2 8 : 216 = **1 : 27**

3 Area = side × side, so both lengths are multiplied by 4.

Area is multiplied by 4 × 4 = **16**

4 10 : 90 = **1 : 9** ✓

5 (a) 24 × 16 × 10 = **3 840 cm^3**

(b) 2^3 = **8** times

6 Perimeter = 24 cm, so the square has sides 6 cm

Areas: 32 : 36

= **8 : 9**