GCSE FOUNDATION · REVISION MAT 5

Comparing lengths, areas and volumes

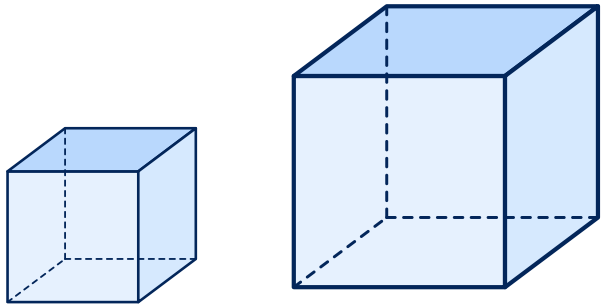
1 Square A has sides 3 cm.
Square B has sides 9 cm.

Write in its simplest form

(a) the ratio of their perimeters

(b) the ratio of their areas

2 Cube A has edges 4 cm.
Cube B has edges 8 cm.



Write the ratio of their volumes in its simplest form.

3 Finn says,

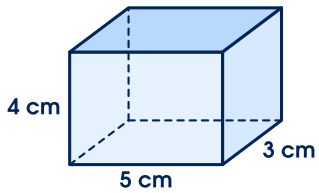
"If you multiply all the sides of a square by 3, its area is multiplied by 3."

Explain why Finn is wrong.

4 Rectangle A is 6 cm by 4 cm.
Rectangle B is 9 cm by 6 cm.

Show that the ratio of their areas is 4 : 9

5 A small box is 5 cm by 4 cm by 3 cm.



A large box has every length 3 times as long.

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

(b) How many times bigger is its volume?

6 A rectangle is 12 cm by 2 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 5

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1 (a) 12 : 36 = **1 : 3**

(b) 9 : 81 = **1 : 9**

2 64 : 512 = **1 : 8**

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

Area is multiplied by 3 × 3 = **9**

4 24 : 54 = **4 : 9** ✓

5 (a) 15 × 12 × 9 = **1 620 cm^3**

(b) 3^3 = **27** times

6 Perimeter = 28 cm, so the square has sides 7 cm

Areas: 24 : 49

= **24 : 49**