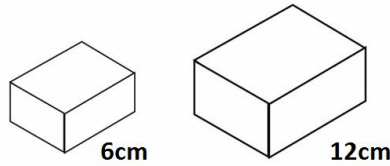
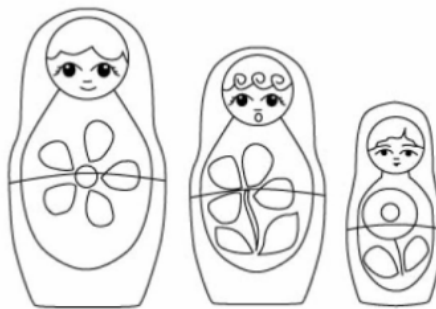


Linear, Area and Volume scale factor enlargements - www.m4ths.com

- (1) Two similar cuboids are shown below. One has a side length of 6cm and the other 12cm.
 (a) Given the surface area of the smaller cuboid is 88cm^2 find the surface area of the larger cuboid.
 (b) Given the volume of the larger cuboid is 384cm^3 find the volume of the smaller cuboid.



- (2) Three Russian dolls are mathematically similar. The surface area of the large doll is 64cm^2 , the middle doll 16cm^2 and the small doll 4cm^2 .
 (a) Given the volume of the middle doll is 320cm^3 find the volume of the other two dolls.
 (b) Given the height of the smallest doll is 3cm find the height of the other two dolls.



- (3) The table below shows scale factors for a range of similar toys made in a factory.

	Linear	Area	Volume
Toy #1 to Toy #2	2		
Toy #3 to Toy #4		9	
Toy #5 to Toy #6		16	
Toy #7 to Toy #8			216
Toy #9 to Toy #10			$64/125$

- (a) Given Toy 4 has a volume of 412cm^3 find the volume of Toy 3.
 (b) Given Toy 7 has a height of 2.5cm find the height of Toy 8.
 (c) Given Toy 2 has a surface area of 4cm^2 find the surface area of Toy 1.
 (d) Given Toy 9 has a surface area of 42cm^2 find the surface area of Toy 10.
 (e) The surface area of Toy 3 is a quarter of that of Toy 9. Find out how much smaller the volume of Toy 3 is than Toy 9.
- (4) Two similar rugby balls are shown below. The length smaller ball is $2/3$ the length of the larger one.
 (a) Find the area and volume scale factors.
 (b) Given the surface area of the smaller ball is 212cm^2 find the surface area of the larger ball.
 (c) Given the volume of the larger ball is 80cm^3 find the volume of the smaller ball.

