

APOLLO

Similar Figures

FBISE Mathematics Class 9 (SSC-I)

Domain B: Geometry

20 questions | questions

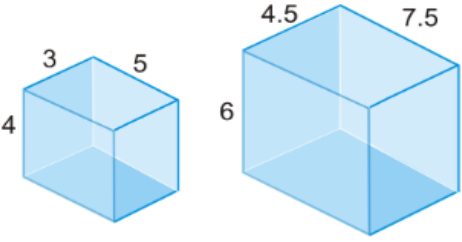
Original FBISE question crops. National Curriculum 2022-23 topic.

17	On a toy model car, the length of the door is 3 cm. If the actual car is exactly 40 times larger than the model, what is the length of the door on the actual car?	43 cm	80 cm	120 cm	1200 cm
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18	A bakery makes two sizes of similar cube-shaped cakes. The larger cake has sides that are twice as long as the smaller cake. If the small cake requires 1 cup of butter, how many cups of butter are needed for the larger cake?	2 cups	4 cups	8 cups	16 cups
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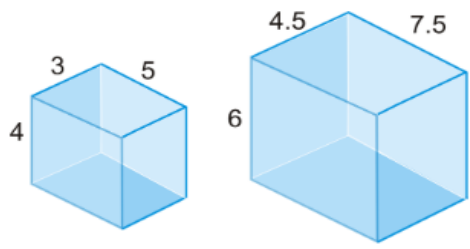
21	Two similar triangles have corresponding sides in the ratio 1 : 3. What is the ratio of their areas?	1 : 6	6 : 1	9 : 1	1 : 9
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22	A cuboid has volume 1000 cm^3 . It is enlarged by a scale factor of 2. What is the volume of the enlarged cuboid?	500 cm^3	2000 cm^3	4000 cm^3	8000 cm^3
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Scenario for MCQs 37 to 40		The given prisms are similar 			
37	What is the linear scale factor from the smaller cuboid to the larger cuboid?	1.25	1.5	2.0	2.25

Scenario for MCQs 37 to 40

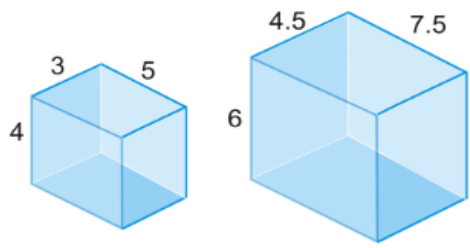
The given prisms are similar



38	The total surface area of the smaller cuboid is 94 cm^2 , what is the total surface area of the larger cuboid?	141 cm^2	211.5 cm^2	317.25 cm^2	423 cm^2
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Scenario for MCQs 37 to 40

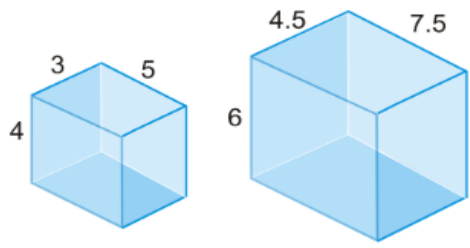
The given prisms are similar



39	The volume of the smaller cuboid is 60 cm^3 , what is the volume of the larger cuboid?	90 cm^3	135 cm^3	202.5 cm^3	270 cm^3
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Scenario for MCQs 37 to 40

The given prisms are similar



40	What is the ratio of the volume of the smaller prism to the volume of the larger prism?	$1 : 1.5$	$1 : 2.25$	$1 : 3.375$	$1 : 4.5$
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6	Two similar rectangles have lengths 6cm and 9 cm. (a) Find ratio of the corresponding sides. (b) Find ratio of the corresponding areas.	3
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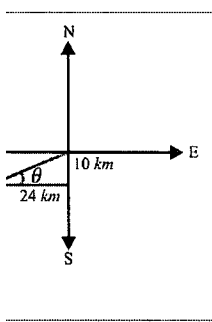
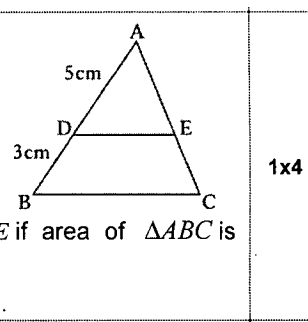
Two similar metal spheres have radii in the ratio 5 : 2. Find the ratio of their surface areas and volumes. If the smaller sphere has volume $40\pi\text{cm}^3$, find the larger sphere's volume.	6
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A company wants to install a new cell phone tower so that it is equidistant from two existing towers located at $P(2,5)$ and $Q(8,3)$. Find equation of the locus where the new tower should be placed.	04
ایک کمپنی ایک نیا ٹاور لگانا چاہتی ہے جو ان کے پہلے سے نقاط $P(2,5)$ اور $Q(8,3)$ پر لگے ٹاورز سے مساوی فاصلہ پر ہوں۔ اس لوکس کی مساوات معلوم کریں جہاں نیا ٹاور لگانا چاہیے۔	
Two similar triangles have areas in the ratio 25:49. The base and height of the smaller triangle are 10 cm and 15 cm, respectively. Find the corresponding base and height of the larger triangle.	04
دو متماثل مثلثوں کے رقبوں کی نسبت 25:49 ہے۔ اگر ایک مثلث کا قاعدہ 10 سم اور اس کی اونچائی 15 سم ہوں تو دوسرے مثلث کا قاعدہ اور اونچائی معلوم کریں۔	

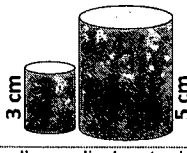
(viii)	A cylindrical water tank has a radius of 5 cm and a height of 12 cm. A second cylindrical tank has a radius of 7.5 cm. Find the height of the second tank if both tanks have the same volume.	04
	سلنڈر شکل کے ایک واٹر ٹینک کا رداس 5 سم اور اونچائی 12 سم ہے۔ ایک دوسرے واٹر ٹینک کا رداس 7.5 سم ہے۔ اس کا قاعدہ اور اونچائی معلوم کریں۔	

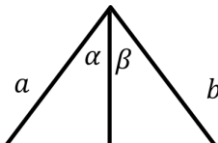
(viii)	Two similar triangles have areas 36 cm^2 and 64 cm^2 . Find ratio of the corresponding sides of the triangles if one side of the smaller triangle is 6 cm.	04
	دو متماثل مثلثوں کے رقبے 36 cm^2 اور 64 cm^2 ہیں، اگر چھوٹے مثلث کا ایک ضلع 6 سم ہے تو بڑے مثلث کے متعلقہ ضلع کی نسبت معلوم کریں۔	

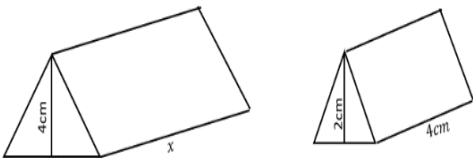
(viii)	The ratio of areas of the bases of two similar cylinders is 9 : 4 . The area of base of the smaller cylinder is 240 cm^2 . Calculate the radius, diameter and area of the base of large cylinder.	04	OR
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	04	OR	In the figure, $\overline{BC} \parallel \overline{DE}$. find: a. Ratio $\frac{DE}{BC}$ b. Ratio $\frac{\text{Area of } \triangle ADE}{\text{Area of } \triangle ABC}$ c. Find the area of $\triangle ADE$ if area of $\triangle ABC$ is 256 cm^2 . d. Area of trapezium $DBCE$. 	1x4
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If two triangles are equal, then their corresponding sides are:	Equal	Unequal	Unproportional	Perpendicular
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In the figure two geometrically similar cylinders are shown. Find:		
a. The ratio of volume of smaller cylinder to larger cylinder.		2+1 +1
b. Curved surface area of smaller cylinder if that of larger one is 250cm^2 .		
c. Volume of larger cylinder if volume of smaller one is 162cm^3 .		

iii.	then find number of elements in $A \times B$.	3	6	8	9
iv.	What is the least common multiple of $7x - 6xy$ and $5xy^3 - 3x^2$?	$(7 - 6y) \times (5x^3 - 3x)$	$(7x - 6xy) \times (5y^3x - 3x^2)$	$x(7 - 6y)$	$x(7 - 6y)(5y^3 - 3x)$
v.	Solution of inequality $-2x - \frac{1}{2} \leq \frac{3}{2}$ is:	$x > -1$	$x < -1$	$x \geq -1$	$x \leq -1$
vi.	What is the radian measure of $15^\circ 50'$?	$\frac{19\pi}{216}$	$\frac{19\pi}{36}$	$\frac{19\pi}{180}$	$\frac{216\pi}{19}$
vii.	If a navigator gives bearing 0° , in which direction should he travel?	North	South	East	West
viii.	In the figure, if $\alpha = \beta$ then what is the value of b ? 	$\frac{cd}{a}$	$\frac{c}{ad}$	$\frac{ad}{c}$	$\frac{ac}{d}$

viii.	In the adjacent similar figures,  find the value of x and the ratio of volumes v_1 and v_2 .	4
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OR	In $\triangle PQR$, a line through points S on PQ meets PR at T such that $PS:SQ = PT:TR$. Prove that $ST \parallel QR$. $\triangle PQR$ میں ایک لائن نقطہ S ضلع PQ پر اور نقطہ T ضلع PR میں سے اس طرح گزرے کہ $PS:SQ = PT:TR$ تو ثابت کریں کہ $ST \parallel QR$	04
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