Unit 9				Similar Figures	
Sr. No.	Questions	A	В	С	D
1	If two polygons are similar, then:	their corresponding angles are equal. √	their areas are equal.	their volumes are equal.	their corresponding sides are equal.
2	The ratio of the areas of two similar polygons is:	equal to the ratio of their perimeters.	equal to the square of the ratio of their corresponding sides. ✓	equal to the cube of the ratio of their corresponding sides.	equal to the sum of their corresponding sides.
3	If the volume of two similar solids is $125 cm^3$ and $27 cm^3$ , the ratio of their corresponding heights is:	3:5	5: 3✓	25: 9	9: 25
4	The exterior angle of a regular pentagon is:	40°	45°	60°	72°✓
5 <b>VI</b> U	A parallelogram has an area of $64 cm^2$ and a similar parallelogram has an area of $144 cm^2$ . If a side of the smaller parallelogram is $8 cm$ , the corresponding side of the larger parallelogram is:	<sup>10 cm</sup> <b>yyab ((</b>	<sup>12 cm√</sup> GHS Ch	<sup>18 cm</sup> ristian	16 cm Daska
6	The total number of diagonals in a polygon with 9 sides is:	18	21	25	27✓
7	Two spheres are similar, and their radii are in the ratio $4:5$ . If the surface area of the larger sphere is $500\pi$ cm <sup>2</sup> , what is the surface area of the smaller sphere?	$256\pi \ cm^2$	320π cm²√	$400\pi~cm^2$	$405\pi~cm^2$
8	A regular polygon has an exterior angle of $30^{\circ}$ . How many diagonals does the polygon have?	54√	90	72	108
9	In a regular hexagon, the ratio of the length of a diagonal to the side length is:	$\sqrt{3}$ : 1	2: 1✓	3: 2	2: 3
10	A regular polygon has an interior angle of $165^{\circ}$ . How many sides does it have?	15	16	20	24✓

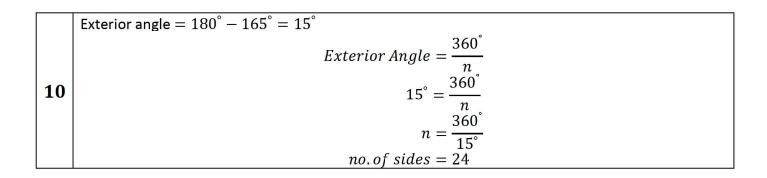
## **Solution of MCQs**

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1	Similar polygons have corresponding angles equal and corresponding sides proportional.				
2	The area ratio of similar polygons is the square of the ratio of their corresponding sides.				
3	$\frac{V_1}{V_2} = \left(\frac{l_1}{l_2}\right)^3$ $\Rightarrow \frac{125}{27} = \left(\frac{l_1}{l_2}\right)^3$ $\sqrt[3]{\frac{125}{27}} = \sqrt[3]{\left(\frac{l_1}{l_2}\right)^3}$ $\frac{5}{3} = \frac{l_1}{l_2}$ $\frac{l_1}{l_2} = \frac{5}{3}$				
4	Exterior angle of pentagon is $=\frac{360^{\circ}}{5} = 72^{\circ}$				
,	Betic of case of similar figures $A_1 - (l_1)^2$				
	Ratio of areas of similar figures $\frac{A_1}{A_2} = \left(\frac{l_1}{l_2}\right)^2$				
	$\frac{64}{100} = \left(\frac{8}{100}\right)^2$				
	$\frac{64}{144} = \left(\frac{8}{l_2}\right)^2$ $\sqrt{\frac{64}{144}} = \sqrt{\left(\frac{8}{l_2}\right)^2}$ $\frac{8}{12} = \frac{8}{l_2}$				
	$\left  64 \right  \left  \left( 8 \right)^2 \right $				
5	$\sqrt{144} = \sqrt{(\overline{l_2})}$				
	, 8 <u>8</u>				
	$\frac{1}{12} - \frac{1}{l_2}$				
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	$l_2 = 12 cm$				
6	The total number of diagonals in a polygon with 9 sides is $=\frac{n(n-3)}{2}=\frac{9(9-3)}{2}=\frac{54}{2}=27$				
	Ratio of areas of similar figures is $\frac{A_1}{A_2} = \left(\frac{l_1}{l_2}\right)^2$				
	112 (62)				
	$\Lambda_1$ / $\Upsilon$ \				
	$\frac{1}{500\pi} = \left(\frac{1}{5}\right)$				
-	$\frac{\frac{1}{500\pi} = \left(\frac{1}{5}\right)}{A_1} $				
7	$\frac{A_1}{500\pi} = \left(\frac{4}{5}\right)^2$ $\frac{A_1}{500\pi} = \frac{16}{25}$				
7	$A_1 \times 25 = 16 \times 500\pi$				
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