Preparing for College Entrance Exams

Strategy for Success

Questions on college entrance exams often require knowledge of areas and volumes. Be sure that you know all the important formulas developed in Chapters 11 and 12. To avoid doing unnecessary calculations, be sure to read the directions to find out whether answers may be expressed in terms of π.

Indicate the best answer by writing the appropriate letter.

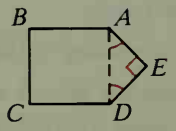
1. A cone has volume 320π and height 15. Find the total area.
   (A) 200π **(B)** 368π **(C)** 264π **(D)** 136π **(E)** 320π

2. Two equilateral triangles have perimeters 6 and $9\sqrt{3}$. The ratio of their areas is:
   (A) $2:3\sqrt{3}$ **(B)** $2\sqrt{3}:9$ **(C)** $4:27$ **(D)** $4:9$ **(E)** $8:81\sqrt{3}$

3. A sphere has volume 288π. Its diameter is:
   (A) $12\sqrt{6}$ **(B)** $6\sqrt{2}$ **(C)** 6 **(D)** $12\sqrt{2}$ **(E)** 12

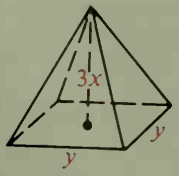
4. $RSTW$ is a rhombus with $m\angle R = 60$ and $RS = 4$. If X is the midpoint of $\overline{RS}$, find the area of trapezoid $SXWT$.
   (A) 12 **(B)** 16 **(C)** $8\sqrt{3}$ **(D)** $6\sqrt{3}$ **(E)** $16 - 2\sqrt{2}$

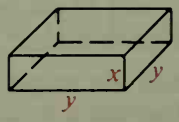
5. If $ABCD$ is a square and $AE = y$, the area of $ABCDE$ is
   (A) $\frac{5}{4}y^2$ **(B)** $\frac{5}{2}y^2$ **(C)** $3y^2$
   (D) $(4 + \frac{1}{2}\sqrt{3})y^2$ **(E)** $(\frac{1}{2} + \sqrt{2})y^2$



Compare the quantity in Column A with that in Column B. Select:
(A) if the quantity in Column A is greater;
(B) if the quantity in Column B is greater;
(C) if the two quantities are equal;
(D) if the relationship cannot be determined from the information given.

	Column A	Column B
6.	volume of square pyramid	volume of square prism





7.	area of triangle	area of sector