Multiple Choice

1) Find the dilated coordinates of (–4, 1), when the center of dilation is at the origin and the scale factor is 6.
   a) (–24, 6)  b) (–4, –1)  c) (–24, –6)  d) (6, –24)

2) If the lengths of a geometrical shape are multiplied by a scale factor of \( \frac{k}{2} \), then the perimeter of the new shape will be multiplied by a scale factor of
   a) \( k^6 \)  d) \( k^5 \)
   b) \( k^4 \)  c) \( \frac{k}{2} \)

3) (10, y) is the dilated point of (2, 3). Determine the value of y, when the center of dilation is at the origin.
   a) 5  d) 15
   b) 3  c) 2

4) M and L are similar quadrilaterals. The perimeter of L is 8 times larger than the perimeter of M. How much larger are the dimensions of L?
   a) 2 times  d) 64 times
   b) 4 times

5) The areas of similar rhombuses are 243 square inches and 48 square inches. Determine the ratio of their perimeters.
   a) 9 : 4  d) 81 : 16
   b) 16 : 81  c) 4 : 9

6) Find the scale factor of two similar cylinders whose volumes are in the ratio 64 : 729.
   a) 8 : 27  b) 9 : 4  d) 27 : 8
   c) 4 : 9
1) Find the dilated coordinates of \((-4, 1)\), when the center of dilation is at the origin and the scale factor is 6.

\[ (-24, 6) \quad \text{a)} \quad (\boxed{-4, -1}) \quad \text{b)} \quad (\boxed{-24, -6}) \quad \text{c)} \quad (6, -24) \quad \text{d)} \]

2) If the lengths of a geometrical shape are multiplied by a scale factor of \(k^2\), then the perimeter of the new shape will be multiplied by a scale factor of

\[ \text{a)} \quad k^6 \quad \text{b)} \quad k^4 \quad \text{c)} \quad \frac{k}{2} \quad \text{d)} \quad k^5 \]

3) \((10, y)\) is the dilated point of \((2, 3)\). Determine the value of \(y\), when the center of dilation is at the origin.

\[ \begin{array}{l}
\text{a)} \quad 5 \\
\text{b)} \quad 3 \\
\text{c)} \quad 2 \\
\text{d)} \quad 15 \\
\end{array} \]

4) \(M\) and \(L\) are similar quadrilaterals. The perimeter of \(L\) is 8 times larger than the perimeter of \(M\). How much larger are the dimensions of \(L\)?

\[ \begin{array}{l}
\text{a)} \quad 2 \text{ times} \\
\text{b)} \quad 8 \text{ times} \\
\text{c)} \quad 4 \text{ times} \\
\text{d)} \quad 64 \text{ times} \\
\end{array} \]

5) The areas of similar rhombuses are 243 square inches and 48 square inches. Determine the ratio of their perimeters.

\[ \begin{array}{l}
\text{a)} \quad 9 : 4 \\
\text{b)} \quad 16 : 81 \\
\text{c)} \quad 4 : 9 \\
\text{d)} \quad 81 : 16 \\
\end{array} \]

6) Find the scale factor of two similar cylinders whose volumes are in the ratio 64 : 729.

\[ \begin{array}{l}
\text{a)} \quad 8 : 27 \\
\text{b)} \quad 9 : 4 \\
\text{c)} \quad 4 : 9 \quad \text{d)} \quad 27 : 8 \\
\end{array} \]