

APTITUDE - SQUARES & CUBES EXAMPLES

Advertisements

Q 1 - $\sqrt{2025} = ?$

A - 45

B - 35

C - 34

D - 30

Answer - A

Explanation

Resolve 2025 into prime numbers first.

$$2025 = 5 \times 5 \times 3 \times 3 \times 3 \times 3 = 5^2 \times 3^2 \times 3^2$$

$$\therefore \sqrt{2025} = 5 \times 3 \times 3 = 45$$

Q 2 - $\sqrt{54} \times \sqrt{6} = ?$

A - 24

B - 15

C - 18

D - 13

Answer - C

Explanation

$$\sqrt{54} \times \sqrt{6} = \sqrt{54 \times 6} = \sqrt{(3 \times 3 \times 6 \times 6)}$$

$$= \sqrt{(3^2 \times 6^2)}$$

$$= \sqrt{18}$$

Q 3 - $\sqrt{(248 + \sqrt{(51 + \sqrt{169}))})} = ?$

A - 15

B - 12

C - 13

D - 16

Answer - D

Explanation

$$\sqrt{(248 + \sqrt{(51 + \sqrt{169}))})} = \sqrt{(248 + \sqrt{(51 + 13)})}$$

$$= \sqrt{(248 + \sqrt{(64)})} = \sqrt{(248 + 8)} = \sqrt{(256)} = 16$$

Q 4 - $\sqrt{(25/16)} = ?$

A - 3/4

B - 5/4

C - 4

D - 4/5

Answer - B

Explanation

$$\sqrt{(25/16)} = \sqrt{25} / \sqrt{16} = 5/4.$$

Q 5 - If $\sqrt{15} = 3.88$. What is $\sqrt{(5/3)}$?

A - 1.213

B - 1.293

C - 1.321

D - 1.432

Answer - B

Explanation

$$\sqrt{(5/3)} = (\sqrt{5} / \sqrt{3}) \times (\sqrt{3} / \sqrt{3}) = \sqrt{15} / 3 = 3.88 / 3 = 1.293$$

Q 6 - If $\sqrt{1369} = 37$ then what is $\sqrt{13.69} + \sqrt{0.1369} + \sqrt{0.001369} + \sqrt{0.00001369}$?

A - 4.0021

B - 4.1107

C - 3.1232

D - 2.1323

Answer - B

Explanation

$$\begin{aligned} & \sqrt{13.69} + \sqrt{0.1369} + \sqrt{0.001369} + \sqrt{0.00001369} \\ &= \sqrt{(1369 / 100)} + \sqrt{(1369 / 10000)} + \sqrt{(1369 / 1000000)} + \sqrt{(1369 / 100000000)} \\ &= \sqrt{1369} / \sqrt{100} + \sqrt{1369} / \sqrt{10000} + \sqrt{1369} / \sqrt{1000000} + \sqrt{1369} / \sqrt{100000000} \\ &= 37/10 + 37/100 + 37/1000 + 37/10000 \\ &= 3.7 + 0.37 + 0.037 + 0.0037 \\ &= 4.1107 \end{aligned}$$

Q 7 - If $\sqrt{15} = 3.8729$ then what is $(\sqrt{5} + \sqrt{3})/(\sqrt{5} - \sqrt{3})$?

A - 7.8729

B - 6.8729

C - 5.8729

D - 4.8729

Answer - A

Explanation

$$\begin{aligned} & (\sqrt{5} + \sqrt{3}) / (\sqrt{5} - \sqrt{3}) \\ &= (\sqrt{5} + \sqrt{3}) / (\sqrt{5} - \sqrt{3}) * (\sqrt{5} + \sqrt{3}) / (\sqrt{5} + \sqrt{3}) \\ &= (\sqrt{5} + \sqrt{3})^2 / (5 - 3) \\ &= (5 + 3 + 2\sqrt{5} + \sqrt{3}) / 2 \\ &= (8 + 2\sqrt{15}) / 2 \\ &= 2(4 + \sqrt{15}) / 2 \\ &= 4 + \sqrt{15} \\ &= 4 + 3.8729 \\ &= 7.8729 \end{aligned}$$

Q 8 - 9261 = ?

A - 21

B - 17

C - 29

D - 23

Answer - A

Explanation

$$\begin{aligned} 9261 &= 3 \times 3 \times 3 \times 7 \times 7 \times 7 \\ &= 3^3 \times 7^3 \\ \therefore 9261 &= (3^3 \times 7^3)^{1/3} \\ &= 3 \times 7 = 21. \end{aligned}$$

Q 9 - What is the least number required to multiply to 9720 to make a perfect cube?

A - 55

B - 65

C - 75

D - 85

Answer - C

Explanation

$$\begin{aligned} 9720 &= 2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 5 \times 3 \times 3 \\ &= 2^3 \times 3^3 \times 3^2 \times 5 \\ \therefore \text{required no: } &3 \times 5^2 = 3 \times 25 = 75 \end{aligned}$$