

**FORM 1**  
**CHAPTER 3**

**Summative Practice**

**Section A**

1  $N = 3^3 \times 6 \times 14 \times k$   
 $N = 3^3 \times 2 \times 3 \times 2 \times 7 \times k$   
 $N = 3^2 \times 3^2 \times 2^2 \times 7 \times k$   
 Therefore,  $k = 7$   
 Answer: **C**

2  $\sqrt{289} < \sqrt{313} < \sqrt{324}$   
 $17 < \sqrt{313} < 18$   
 Answer: **B**

3  $m = 0.7 < 1 \rightarrow$  the larger is the exponent value, the smaller is the result  
 Answer: **D**

4  $64 = 8^2 = 4^3$   
 Answer: **B**

5 Length of side =  $\sqrt{529} = 23$  cm  
 Perimeter =  $4(23) = 92$  cm  
 Answer: **C**

6  $\sqrt[3]{-\frac{30}{65}} \approx \sqrt[3]{-\frac{27}{64}} \approx -\frac{3}{4}$   
 Answer: **C**

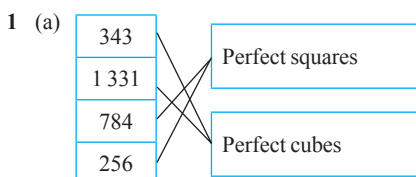
7  $729 < 889 < 1\,000 \rightarrow 9^3 < 889 < 10^3$   
 $\therefore (t-1)^3 = 9$   
 $t-1 = 9$   
 $t = 10$   
 Answer: **D**

8 Length of side of wooden block  $\sqrt[3]{2\,744} = 14$  cm  
 Length of side of the box =  $14 + 1.5 + 1.5 = 17$  cm  
 (space on the left and right of each side)  
 Volume of box =  $17^3 = 4\,913$  cm<sup>3</sup>  
 Answer: **D**

9  $\sqrt{50} \times \sqrt{18} - \sqrt{4}$   
 $= \sqrt{25(2)} \times \sqrt{9(2)} - \sqrt{4}$   
 $= 5\sqrt{2} \times 3\sqrt{2} - 2$   $\sqrt{2} \times \sqrt{2} = 2$   
 $= 5(3)(2) - 2$   
 $= 28$   
 Answer: **A**

10  $\sqrt[3]{66\,000} = \sqrt[3]{66} \times \sqrt[3]{1\,000}$   
 $\sqrt[3]{64} < \sqrt[3]{66} < \sqrt[3]{125}$   
 $4 < \sqrt[3]{66} < 5$   
 $\sqrt[3]{1\,000} = 10$   
 $4 \times 10 < \sqrt[3]{66} \times \sqrt[3]{1\,000} < 5 \times 10$   
 $40 < \sqrt[3]{66\,000} < 50$   
 Answer: **D**

**Section B**



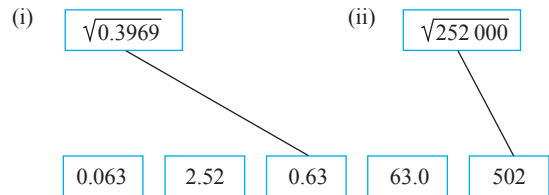
(b)  $6.3^2 = 39.69 \rightarrow \sqrt{39.69} = 6.3$   
 $5.02^2 = 25.2 \rightarrow \sqrt{25.2} = 5.02$

$$\begin{array}{r} \sqrt{0.3969} \\ 0 \ 6 \ 3 \\ \hline \end{array}$$

$$\sqrt{0.3969} = 0.63$$

$$\begin{array}{r} \sqrt{252000} \\ 5 \ 0 \ 2 \\ \hline \end{array}$$

$$\sqrt{252\,000} = 502$$



**Section C**

1 (a)  $\sqrt[3]{-\frac{3}{5\,184}} = \sqrt[3]{-\frac{3}{16 \times 12 \times 27}}$   
 $\sqrt[3]{-\frac{3}{16 \times 12 \times 27}}$   
 $= \sqrt[3]{-\frac{3}{4 \times 4 \times 4 \times 3 \times 3 \times 3 \times 3}}$   
 $= \sqrt[3]{-\frac{1}{4 \times 4 \times 4 \times 3 \times 3 \times 3}}$   
 $= \sqrt[3]{-\frac{1}{4^3 \times 3^3}}$   
 $= -\frac{1}{12}$

(b)  $\frac{6^2 + \sqrt[3]{-216} - (2^3 - \sqrt{144})}{\sqrt{0.25}}$   
 $= \frac{36 + (-6) - (8 - 12)}{0.5}$   
 $= \frac{36 - 6 - (-4)}{0.5}$   
 $= \frac{34}{0.5}$   
 $= 68$

(c) Each row has 13 seeds.  
 Total number of seeds in the box =  $13^2 = 169$   
 Remaining seeds =  $196 - 169 = 27$   
 The excess seeds that can be planted in another square box with 5 seeds per row, which is  $5^2 = 25$  seeds

(d) (i) Length of side of the tank =  $x$   
 An open cube has 5 surfaces, with the area of each surface =  $x^2$   
 $5x^2 = 845$   
 $x^2 = 169$   
 $x = 13$  cm  
 (ii) Volume =  $13^3 = 2\,197$  cm<sup>3</sup>