

8. A rational number between $\frac{1}{7}$ and $\frac{2}{7}$ is
- (A) $\frac{1}{14}$ (B) $\frac{2}{21}$
(C) $\frac{5}{14}$ (D) $\frac{5}{21}$
9. The number 1.101001000100001... is
- (A) A natural number (B) A whole number
(C) A rational number (D) An irrational number
10. On adding $2\sqrt{3}$ and $3\sqrt{2}$ we get
- (A) $5\sqrt{5}$ (B) $5(\sqrt{3} + \sqrt{2})$
(C) $2\sqrt{3} + 3\sqrt{2}$ (D) None of these
11. On dividing $6\sqrt{27}$ by $2\sqrt{3}$ we get
- (A) $3\sqrt{9}$ (B) 6
(C) 9 (D) None of these
12. $(-5 + 2\sqrt{5} - \sqrt{5})$ is
- (A) An irrational number (B) A positive rational number
(C) A negative rational number (D) An integer
13. $(\sqrt{12} + \sqrt{10} - \sqrt{2})$ is
- (A) a positive rational number (B) equal to zero
(C) an irrational number (D) a negative integer
14. $(-7 + 4\sqrt{7} - 3\sqrt{7})$ is
- (A) A positive rational number (B) An irrational number
(C) A negative rational number (D) Equal to zero

15. The number $(3 - \sqrt{3})(3 + \sqrt{3})$ is
(A) An irrational number (B) A rational number
(C) Not a natural number (D) None of these
16. On simplifying $(\sqrt{5} + \sqrt{7})^2$, we get
(A) 12 (B) $\sqrt{35}$
(C) $\sqrt{5} + \sqrt{7}$ (D) $12 + 2\sqrt{25}$
17. On simplifying $8^3 \times 2^4$, we get
(A) 16^7 (B) 2^{13}
(C) 2^{10} (D) 8^4
18. For rationalising the denominator of the expression $\frac{1}{\sqrt{12}}$ we multiply and divide by
(A) $\frac{1}{\sqrt{12}}$ (B) 12
(C) $\sqrt{2}$ (D) $\sqrt{3}$
19. The value of $\frac{1}{\sqrt{10}}$ when $\sqrt{10} = 3.162$ is
(A) .3162 (B) 31.62
(C) .03162 (D) 316.2
20. $(16)^{3/4}$ is equal to
(A) 2 (B) 4
(C) 8 (D) 16

Answers

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|--------|-----------|--------|--------|--------|
| 1.(A) | 2.(C) | 3.(A) | 4.(D) | 5.(D) |
| 6.(D) | 7.(B),(C) | 8.(D) | 9.(D) | 10.(C) |
| 11.(C) | 12.(A) | 13.(C) | 14.(B) | 15.(B) |
| 16.(D) | 17.(B) | 18.(D) | 19.(A) | 20.(C) |

Long Answer Type

- Every whole number is a natural number write true or false.
- If $x = \frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}+\sqrt{2}}$ and $y = \frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}}$ find the value of $x^2 + y^2 + xy$.
- If $x = \frac{2-\sqrt{5}}{2+\sqrt{5}}$ and $y = \frac{2+\sqrt{5}}{2-\sqrt{5}}$ find the value of $x^2 - y^2$.
- Determine rational numbers p and q if

$$\frac{7+\sqrt{5}}{7-\sqrt{5}} - \frac{7-\sqrt{5}}{7+\sqrt{5}} = p - 7\sqrt{5}q$$
- Simplify the following :

$$\frac{6}{2\sqrt{3}-\sqrt{6}} + \frac{\sqrt{6}}{\sqrt{3}+\sqrt{2}} - \frac{4\sqrt{3}}{\sqrt{6}-\sqrt{2}}$$
- Simplify the following:

$$\frac{3\sqrt{2}}{\sqrt{6}-\sqrt{3}} + \frac{2\sqrt{3}}{\sqrt{6}+2} - \frac{4\sqrt{3}}{\sqrt{6}-\sqrt{2}}$$
- Show that:

$$\frac{1}{3-\sqrt{8}} - \frac{1}{\sqrt{8}-\sqrt{7}} + \frac{1}{\sqrt{7}-\sqrt{6}} - \frac{1}{\sqrt{6}-\sqrt{5}} + \frac{1}{\sqrt{5}-2} = 5$$
- If: $x = \frac{\sqrt{p+q} + \sqrt{p-q}}{\sqrt{p+q} - \sqrt{p-q}}$ then find the value of $qx^2 - 2px + q$.
- If $x = 2 + 3\sqrt{2}$ then find the value of $\left(x + \frac{14}{x}\right)$
- Find two rational numbers between 0.1 and 0.3
- Express $3\frac{1}{8}$ in the form of decimal.
- Simplify : $(4 + \sqrt{3})(4 - \sqrt{3})$
- Rationalize the denominator of $\frac{1}{\sqrt{3}-\sqrt{2}}$.
- Express $0.\overline{245}$ as a fraction in the simplest form.
- If $x = (2 + \sqrt{5})$ find the value of $x^2 + \frac{1}{x^2}$
- Simplify $11.\overline{4565} \div 2.\overline{67}$
- Find the value of x in $\sqrt[3]{44x-7}$