

Number System-Assignment

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Q.1: Find eight rational numbers between 8 and 12.

Q.2: Find four rational numbers between $\frac{2}{5}$ and $\frac{5}{2}$.

Q.3: Show the following numbers on number line: $\sqrt{2}$, $\sqrt{4}$, $\sqrt{7}$, $\sqrt{8}$.

Q.4: Find five irrational numbers between $\frac{1}{7}$ and $\frac{3}{7}$.

Q.5: Write the following in decimal form and tell about the decimal expansion. $\frac{45}{100}$, $\frac{1}{7}$, $\frac{2}{13}$, $\frac{8}{9}$.

Q.6: Determine following numbers as rational or irrational. $\sqrt{21}$, $\sqrt{9}$, $\sqrt{121}$, 4.583583583.., 2.101001000100001....

Q.7: Identify the followings as rational or irrational. $2-\sqrt{3}$, $3+\sqrt{5}$, $1/\sqrt{3}$

Q.8: Simplify following expressions.

(A) $(2-\sqrt{3})(2+\sqrt{3})$

(B) $(2-\sqrt{3})^2$

(C) $(2-\sqrt{5})(2+\sqrt{125})$

(D) $(2-\sqrt{9})(2+\sqrt{4})$

Q.9: Rationalize the denominator of followings.

(A) $\frac{1}{2-\sqrt{3}}$

(B) $\frac{3}{2-\sqrt{7}}$

(C) $\frac{4-\sqrt{5}}{2-\sqrt{3}}$

(D) $\frac{4-\sqrt{5}}{\sqrt{3}}$

Q.10: Find:

(A) $25^{-\frac{1}{2}}$

(B) $\sqrt[3]{125}$

(C) $25^{\frac{3}{2}}$

(D) $64^{\frac{3}{9}}$

Q.11: Simplify:

(A) $25^{\frac{3}{2}} \cdot 25^{\frac{1}{2}}$

(B) $4^{\frac{3}{2}} \cdot 25^{\frac{3}{2}}$

(C) $\frac{1}{(11)^{\frac{3}{2}}} \cdot 11^{\frac{7}{2}}$

(D) $12^{-\frac{7}{2}} \cdot 12^{\frac{9}{2}}$

Answer:

1. $\frac{33}{4}, \frac{34}{4}, \frac{35}{4}, \frac{36}{4}, \frac{37}{4}, \frac{38}{4}, \frac{39}{4}, \dots$

2. $\frac{5}{10}, \frac{6}{10}, \frac{7}{10}, \frac{8}{10}, \dots$

3. *do*

4. *0.19265847...., 0.213645987...., 0.298657432....., 0.3658423668....., 0.4198653274.... (Your answer may be different, because there are infinitely many irrational number between two numbers)*

5. *0.45 (Terminating), $0.\overline{142857}$ (Non Terminating Repeating), $0.\overline{153846}$ (Non Terminating Repeating), $0.\overline{8}$ (Non Terminating Repeating)*

6. **Irrational, Rational, Rational, Rational, Irrational**

7. **Irrational, Irrational, Irrational**

8. **1, $7-2\sqrt{3}$, $-21+8\sqrt{5}$, -4**

9. **$2+\sqrt{3}$, $-2-\sqrt{7}$, $(4-\sqrt{5})(2+\sqrt{3})$, $\frac{(4-\sqrt{5})\sqrt{3}}{3}$**

10. **$\frac{1}{5}$, 5, 125, 4**

11. **625, 1000, 121, 20736**

For any further query:

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