



MATHS

BOOKS - MODERN PUBLICATION

MATHS (KANNADA ENGLISH)

REAL NUMBERS

Multiple Choice Questions Level I

1. Each prime number has:

A. no factor

B. only one factor

C. only two factors

D. more than two factors.

Answer: C



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2. A rational number in its lowest terms can be expressed as a non-terminating recurring

decimal iff the denominator has no prime factor other than:

A. 2

B. 5

C. 2 and 5

D. 2 and 3

Answer: C



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3. A rational number in its lowest terms can be expressed as a terminating recurring decimal iff the denominator has no prime factor other than :

A. 2

B. 5

C. 2 and 5

D. 2 and 3

Answer: D



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4. Irrational numbers are :

A. irrational decimals

B. non-terminating, recurring decimals

C. non-terminating , non-recurring
decimals

D. None of these

Answer: C



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5. π and e are :

A. natural numbers

B. integers

C. rational numbers

D. irrational numbers.

Answer: D



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6. The arithmetical fraction that exceeds its square by the greatest quantity is :

A. $\frac{1}{4}$

B. $\frac{1}{2}$

C. $\frac{3}{4}$

D. None of these

Answer: B



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7. If $2 < x < 3$, then :

A. $|x - 3| < |x - 2|$

B. $(x - 3) > (x - 2)$

C. $(x - 3)(x - 2) < 0$

D. $\frac{x - 3}{x - 2} > 0$

Answer: C



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8. If $5 \leq x \leq 8$, then :

A. $(x - 5)(x - 8) \geq 0$

B. $(x - 5)(x - 8) > 0$

C. $(x - 5)(x - 8) \leq 0$

D. $(x - 5)(x - 8) < 0$

Answer: C



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9. If $(x - 1)(x - 5) \geq 0$, then the solution set is :

A. $x \geq 1$

B. $x \leq 5$

C. $x \leq -5$

D. $x \leq 1$ or $x \geq 5$.

Answer: D



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10. If $\frac{x^2 - 5x + 6}{x^2 - x + 1}$ is positive, then :

A. $x < 2$

B. $2 < x < 3$

C. $x > 3$

D. $x < 2$ or $x > 3$.

Answer: D



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11. The number $\log_2 7$ is :

A. an integer

B. a rational number

C. an irrational number

D. a prime number

Answer: C



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12. If $x = 2.352$, then x equals:

A. $\frac{2352}{999}$

B. $\frac{2329}{999}$

C. $\frac{2352}{990}$

D. $\frac{2329}{990}$

Answer: D



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13. If x, y are two real numbers such that $xy = 5$,
then :

A. $x = 1, y = 5$

B. x, y are both rational

C. x rational, y irrational

D. x, y are either both rational or both irrational .

Answer: D



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14. The number of real roots of

$$|x|^2 - 7|x| + 12 = 0 \text{ is :}$$

A. one

B. two

C. three

D. four

Answer: D



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15. The number of integral pairs (x, y) satisfying the equation $2x^2 - 3xy - 2y^2 = 7$

is :

A. 1

B. 2

C. 3

D. 4

Answer: B



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16. If $x, y \in R$, then :

A. $|x + y| \leq |x| + |y|$

B. $|x + y| > |x| + |y|$

C. $|x + y| = |x| - |y|$

D. $|x + y| \leq |x| - |y|$

Answer: A



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17. If $a, b, c \in \mathbb{R}$ and $a > b \Rightarrow ac < bc$, then :

A. $c \geq 0$

B. $c \leq 0$

C. $c > 0$

D. $c < 0$.

Answer: D



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18. If x and y are reals, then

$$\frac{1}{2}(x + y + |x - y|) = x \text{ holds iff.}$$

A. $x > y$

B. $x < y$

C. $x = y$

D. $x \geq y$

Answer: D



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19. The solution set of $|5x - 3| = -1$ is :

A. $\{0\}$

B. ϕ

C. $\left\{ \frac{3}{5} \right\}$

D. None of these

Answer: B



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20. The equation $|x + 4| = x$ has solution :

A. $x = -2$

B. $x = 2$

C. $x = -4$

D. None of these

Answer: A



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21. The solution of $\frac{1}{2x - 5} > 0$ is :

A. $\left[\frac{5}{2}, \infty \right)$

B. $\left(\frac{5}{2}, \infty \right)$

C. $\left(-\infty, \frac{5}{2} \right)$

D. $\left(-\infty, \frac{5}{2} \right]$

Answer: B



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22. The solution of $6 + x - x^2 > 0$ is :

A. $-2 < x < -1$

B. $-2 < x < 3$

C. $-1 < x < 2$

D. None of these

Answer: B



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23. If $|x + 5| < 3$, then :

A. $-8 < x < -2$

B. $2 < x < 8$

C. $-2 < x < 2$

D. $-8 < x < 8$

Answer: A



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24. If $a, b \in N$ such that $a^2 - b^2$ is prime, then the correct relationship is :

A. $a^2 - b^2 = 0$

B. $a^2 - b^2 = a - b$

C. $a^2 - b^2 = a + b$

D. $a^2 - b^2 = 1.$

Answer: C



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25. The set of values of x for which the inequality

$$|x - 1| + |x + 1| < 4$$

always holds true is :

A. $(-2, 2)$

B. $(-\infty, -2) \cup (2, \infty)$

C. $(-\infty, -1] \cup [1, \infty)$

D. None of these

Answer: A



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Multiple Choice Questions Level II

1. If $x = |\alpha + \beta|$, $y = |\alpha| + |\beta|$, $z = |\alpha - \beta|$,

then :

A. $x = \text{Max. } (y, z)$

B. $y = \text{Max. } (x, z)$

C. $z = \text{Max. } (x, y)$

D. $y = \text{Min. } (x, z)$

Answer: B



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2. If p, q, r are real numbers then:

A. $\max. (p, q) < \max. (p, q, r)$

B. $\min. (p, q) = \frac{1}{2}(p + q - |p - q|)$

C. $\min. (p, q) = \min. (p, q, r)$

D. None of these

Answer: B



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3. The integral value of real x for which :

$$(5x - 1) < (x + 1)^2 < (7x - 3) \text{ is :}$$

A. 1

B. 2

C. 3

D. 4

Answer: C



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4. If x and y are rational numbers such that

\sqrt{xy} is irrational, then $\sqrt{x} + \sqrt{y}$ is :

A. rational

B. irrational

C. non-real

D. None of these.

Answer: B



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5. If x and y are real numbers such that

$x > y$ and $|x| > |y|$, then :

A. $x < 0$

B. $x > 0$

C. $y > 0$

D. $y < 0$

Answer: B



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6. If $\log_5 \left(6 + \frac{2}{x} \right) + \log_{(1/5)} \left(1 + \frac{x}{10} \right) \leq 1$,

then x lies in :

A. $(-\infty, 1 - \sqrt{5}) \cup (1 + \sqrt{5}, \infty)$

B. $(1, 1 + \sqrt{5})$

C. $(1 - \sqrt{5}, 1 + \sqrt{5})$

D. $(1 - \sqrt{5}, 1)$

Answer: A



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7. If $|2x + 5| \leq x + 3$, then x lies in the interval :

A. $\left[-\frac{8}{3}, -\frac{5}{2} \right]$

B. $\left[-\frac{8}{3}, -2 \right]$

C. $\left[-\frac{5}{2}, -2 \right]$

D. $\left[\frac{5}{2}, \frac{8}{3} \right]$

Answer: B



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8. If a, b, c are distinct positive real numbers and $a^2 + b^2 + c^2 = 1$, then $ab + bc + ca$ is :

- A. less than 1
- B. equal to 1
- C. greater than 1
- D. any real number.

Answer: A



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