MATHEMATICS

DPP

DAILY PRACTICE PROBLEMS

DPP No. 7

Total Marks : 26

Max. Time : 26 min.

Topics : Fundamentals of Mathematics, Quadratic Equation

Type of Questions		**M.M., Min.**
Single choice Objective (no negative marking) Q.1 to 7	**(3 marks, 3 min.)**	**[9, 9]**
Short Subjective Questions (no negative marking) Q.8	**(4 marks, 5 min.)**	**[4, 5]**
Multiple choice objective (no negative marking) Q.9	**(5 marks, 4 min.)**	**[5, 4]**
Match the Following (no negative marking) Q.10	**(8 marks, 8 min.)**	**[8, 8]**

1. The solution set of the equation $|2x + 3| - |x - 1| = 6$ is

(A) $x \in (-10, 2)$ (B) $x \in [-10, 2)$ (C) $x \in [-10, 2]$ (D) $x \in \{-10, 2\}$

2. Value of x satisfying $\left|\frac{x}{|x|}\right| = \frac{x}{|x|}$ is/are

(A) $x \in R$ (B) $x \in R - \{0\}$ (C) $x \in R^+$ (D) $x \in R^-$

3. Number of positive integers x for which $f(x) = x^3 - 8x^2 + 20x - 13$, is a prime number, is

(A) 1 (B) 2 (C) 3 (D) 4

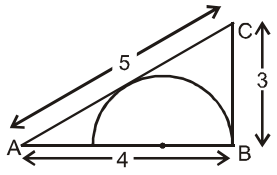
4. The product of all the solutions of the equation $(x-2)^2 - 3|x - 2| + 2 = 0$ is

(A) 2 (B) – 4 (C) 0 (D) none of these

5. In the figure shown, radius of the circle is

(A) $\frac{5}{8}$ (B) $\frac{3}{2}$

(C) $\frac{11}{8}$ (D) $\frac{5}{3}$



6. Draw the graphs of

(i) $y = |x + 2| + |x - 3|$ (ii) $y = x + \frac{x}{|x|}$

7. Draw graph of

(i) $y = |3x - 5|$ (ii) $y = |2x + 1|$

8. $1 < \frac{3x^2 - 7x + 8}{x^2 + 1} \le 2$

9. If $p, q \in N$ satisfy the equation $x^{\sqrt{x}} = (\sqrt{x})^x$, then p and q are

(A) relatively prime (B) twin prime

(C) coprime (D) if $\log_q p$ is defined then $\log_p q$ is not an vice versa

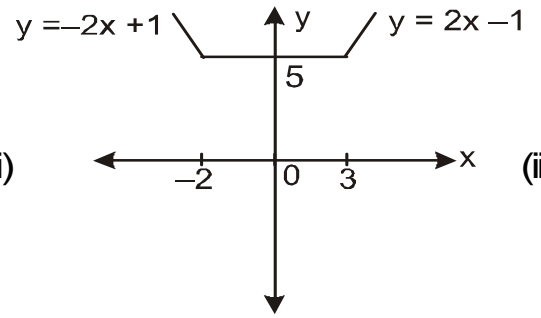
10. **Match the column**

Column – I		**Column – II**	
(A)	Solution set of $\|x - 2\| \ge 0$	(p)	$x \in \phi$
(B)	Solution set of $\|x - 2\| > 0$	(q)	$x \in (-\infty, \infty)$
(C)	Solution set of $\|x - 2\| < 0$	(r)	$x = 2$
(D)	Solution set of $\|x - 2\| \le 0$	(s)	$x \in (-\infty, \infty) - \{2\}$

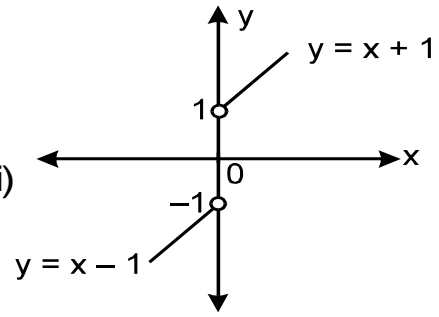
Answers Key

1. (D) **2.** (C) **3.** (C) **4.** (C) **5.** (B)

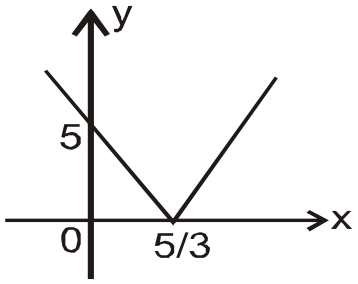
6.(i)



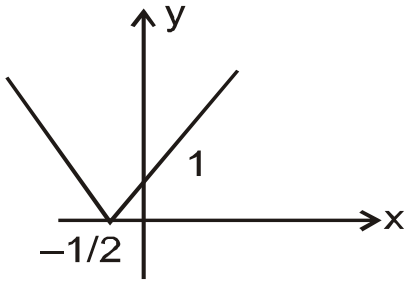
(ii)



7. (i)



(ii)



8. [1, 6]

9. (ACD)

10. (A) → (q), (B) → (s), (C) → (p), (D) → (r)