MTH101 Assignment No:01 Spring 2022

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اسائنمنٹ بنانے کے لیے رابطہ کر سکتے ہیں

Total marks: 15
Due Date: 07th June, 2022

Question 1	**Marks=05**

Solve the inequality

$$\frac{3}{|2x-1|} \geq 4$$

and write the solution in the form of intervals.

Question 2	**Marks=2+2+6**

Find the value of p for which the line $4x+py=3$ will

i. Have slope 3.
ii. Have y - intercept 7.
iii. Be perpendicular to the line $2x-3y=5$

Now

Question 1	**Marks=05**

Solve the inequality

$\frac{3}{|2x-1|} \geq 4$ and write the solution in the form of intervals.

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Solve the inequalityand write the solution in the form of intervals.

$$\frac{3}{|2x-1|} \geq 4$$

$$\frac{3}{4} \geq |2x-1|$$

$$\pm\frac{3}{4} \geq (2x-1)$$

$$-\frac{3}{4} \geq (2x-1) \leq +\frac{3}{4}$$

$$-\frac{3}{4} \geq (2x-1) \qquad (2x-1) \leq +\frac{3}{4}$$

$$-3 \geq 4(2x-1) \qquad 4(2x-1) \leq +3$$

$$-3 \geq (8x-4) \qquad (8x-4) \leq +3$$

$$-3 \geq 8x-4 \qquad 8x-4 \leq +3$$

$$-3+4 \geq 8x \qquad 8x \leq +3+4$$

$$1 \geq 8x \qquad 8x \leq 7$$

$$\frac{1}{8} \geq x \qquad x \leq \frac{7}{8}$$

$$\frac{1}{8} \geq x \leq \frac{7}{8}$$

SOltion set in interval: $\{\frac{1}{8}, \frac{7}{8}\}$

Question 2 **Marks=2+2+6**

Find the value of p for which the line $4x+py=3$ will

i. Have slope 3.
ii. Have y - intercept 7.

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iii. Be perpendicular to the line $2x-3y=5$

Find the value of P 4x+py=3

SOl:

$4x+py=3$

$py=3-4x$

$y=\frac{3-4x}{p}$

$y=\frac{3}{p}-\frac{4}{p}x$ $\because$ y=mx+c

$y=-\frac{4}{p}x+\frac{3}{p}$ $\because m_1=-\frac{4}{p}$ and c=$\frac{3}{p}$

so,

$p=-\frac{4}{m}$

$m_1=-\frac{4}{p}$

i. Have slope 3.

Find the value of P 4x+py=3

i- slope is 3

Sol:

Given :

$slope=m=3$ $\because$ we find that $m_1=-\frac{4}{p}$

so, *put* m = 3 because slope is 3 Given

$3=-\frac{4}{p}$

$p=-\frac{4}{3}$

ii. Have y - intercept 7.

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Sol:

$4x + py = 3$

$\because x = 0$ bacause of y-intercept

$4(0) + py = 3$

$y = \frac{3}{p}$

$7 = \frac{3}{p}$ $\quad \because$ y-intercept *is* $-$ *intercept* 7.

$p = \frac{3}{7}$

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