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Quiz 1

Q#1:-

$$|-3x+5| \leq -16$$

$$16 \leq -3x+5 \leq -16$$

$$16-5 \leq -3x+5-5 \leq -16-5$$

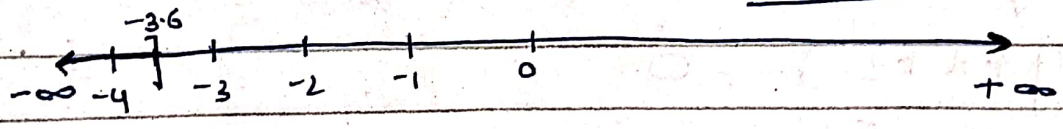
$$11 \leq -3x \leq -21$$

$$\div -3 \quad \frac{11}{-3} \leq \frac{-3x}{-3} \leq \frac{-21}{-3}$$

$$\boxed{\frac{-11}{3} \geq x \geq 7}$$

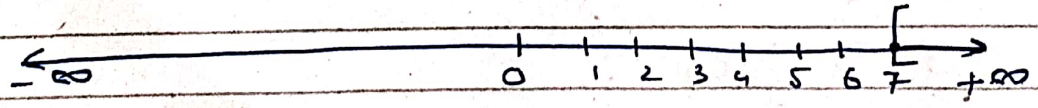
$$-3.6 \geq x \geq 7$$

$$\boxed{-3.6 \geq x}$$



$$I = (-\infty, -3.6]$$

$$\boxed{x \geq 7}$$



$$I = [7, \infty)$$

Q#3:-

$P_1(3,-2)$, $P_2(5,-6)$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$= \frac{-6-(-2)}{5-3}$$

$$= \frac{-6+2}{4}$$

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

$$m = -1$$

Equation of Straight line:-

$$y - y_1 = m(x - x_1)$$

$$y-(-2) = -1(x-3)$$

$$y+2 = -x+3$$

$$y+x+2-3 = 0$$

$$x+y-1 = 0$$

Verify

$$x+y-1 = 0$$

$$3+(-2)-1 = 0$$

$$3-3 = 0$$

$$0 = 0$$

Q #4:- Find distance

$P_1(4, 1/2)$, $P_2(9, 7/2)$

x_1 y_1 x_2 y_2

$$|d| = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$= \sqrt{(9-4)^2 + (7/2 - 1/2)^2}$$

$$= \sqrt{(5)^2 + \left(\frac{7-1}{2}\right)^2}$$

$$= \sqrt{25 + \left(\frac{6}{2}\right)^2}$$

$$= \sqrt{25 + 3^2}$$

$$= \sqrt{25 + 9}$$

$$\boxed{|d| = \sqrt{34}}$$

Q#2:-

$$f(x) = \sqrt{\frac{1}{2} - 8x}$$

put

$$\sqrt{\frac{1}{2} - 8x} = 0$$

Taking square

$$\frac{1}{2} - 8x = 0$$

$$\frac{1}{2} = 8x$$

$$x = \frac{1}{16} = 0.0625$$

Now, $\frac{1}{2} - 8x > 0$

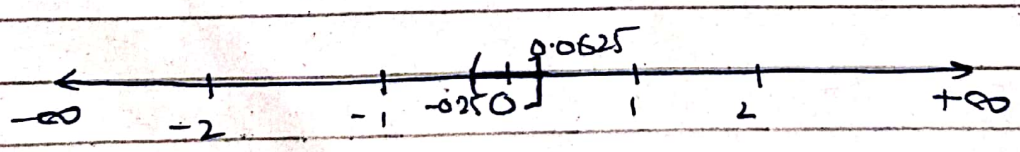
$$-8x > 2$$

$$x > -\frac{2}{8}$$

$$x > -\frac{1}{4}$$

$$\boxed{x > -0.25}$$

Domain set =



Domain set = $R - \{-0.25\}$