

1st exercise:

1. If α is the acute angle that (d) of slope: $a = \sqrt{3}$ with x-axis, then

($\frac{1}{2}$) $a = \tan \alpha$

So, $\tan \alpha = \sqrt{3}$

hence $\alpha = \tan^{-1}(\sqrt{3})$

($\frac{1}{2}$ pt) $\alpha = 60^\circ$

but coordinate axes are perpendicular

then $\beta + \alpha = 90^\circ$ (where β is angle formed between

($\frac{1}{2}$ pt) Thus, $\beta = 30^\circ$ (d) & y-axis)

Choice: B

2. $\left[\frac{3x+1}{3} - \frac{x-1}{2} < 2x-1 \right] \times (6)$

$3x + 5 < 12x - 6$

$(-9x < -11) \times (-1)$

$x > \frac{11}{9}$

Inequality-2: $3(x-1) + 2 \leq 2x + 3$

$x \leq 4$

hence, $\frac{11}{9} < x \leq 4$

Thus, integers that verify the above double inequality are 2, 3 & 4.

Choice - C

(1) 3) \bar{X} (mean) = $\frac{15 \times 20 + 30 \times 10}{50} = 12$

Choice - B