



## DPP – 2 (Baic Math)

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<https://physicsaholics.com/home/courseDetails/36>

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<https://youtu.be/JyrG4yyzppM>

Written Solution on Website:-

<https://physicsaholics.com/note/notesDetalis/70>

- Q 1. Area of triangle formed by line  $y-x = 6$ , x axis and y axis is  
(a) 36 (b) 24 (c) 18 (d) 12
- Q 2. Equation of line parallel to line  $3y + 4x = 12$  and passing through point (3,3) is  
(a)  $3y + 4x = 6$  (b)  $3y + 4x = 9$  (c)  $3y + 4x = 8$  (d)  $3y + 4x = 21$
- Q 3. If straight lines  $3x + 4y = 3$  and  $6x - by = 3$  are perpendicular to each other, Find b ?  
(a)  $3/5$  (b)  $4/9$  (c)  $7/2$  (d)  $9/2$
- Q 4. Distance between points (1,3) & (-3,6)?  
(a) 5 (b) 3 (c) 4 (d) None of these
- Q 5. Coordinates of the point which divides the distance between the points A(0,2) & B(4,0) in the ratio 1:2 is?  
(a)  $(\frac{1}{3}, \frac{2}{3})$  (b)  $(-\frac{4}{3}, -\frac{4}{3})$  (c)  $(\frac{4}{3}, \frac{4}{3})$  (d)  $(-\frac{1}{3}, -\frac{1}{3})$
- Q 6. Find the gradient of line  $3x + 5y - 2 = 0$ ?  
(a)  $-\frac{3}{5}$  (b)  $-\frac{5}{3}$  (c) -3 (d) 5
- Q 7. Find out the slope of line which is passing through the points (5,0) & (-2,6)?  
(a)  $\frac{6}{7}$  (b)  $-\frac{6}{7}$  (c) 6 (d) -6
- Q 8. Find out the equation of line which is passing through the points (3,1) & (2,-1)?  
(a)  $x - 3y - 2 = 0$  (b)  $x - y = 0$   
(c)  $y - 2x + 5 = 0$  (d)  $2y - x + 5 = 0$
- Q 9. Point of intersection of lines  $3x + 2y - 1 = 0$  &  $y = x + 2$ ?  
(a)  $(-\frac{3}{5}, \frac{7}{5})$  (b)  $(\frac{3}{5}, \frac{7}{5})$  (c)  $(\frac{3}{5}, -\frac{7}{5})$  (d)  $(-\frac{3}{5}, -\frac{7}{5})$
- Q 10. Find out the 'x' intercept of line  $2x + 4y - 7 = 0$ ?  
(a)  $\frac{2}{7}$  (b)  $\frac{1}{7}$  (c)  $\frac{7}{2}$  (d) 7
- Q 11. Two straight line  $y = m_1x + c_1$  &  $y = m_2x + c_2$  are parallel, if:  
(a)  $m_1 = -m_2$  (b)  $m_1m_2 = -1$  (c)  $m_1m_2 = 0$  (d)  $m_1 = m_2$
- Q 12. Which of the following is not an equation of straight line?  
(a)  $y = 3x + 2$  (b)  $x - 5y - 1 = 0$  (c)  $x = 3y + 2$  (d) None of these















## Answer Key

<b>Q.1 c</b>	<b>Q.2 d</b>	<b>Q.3 d</b>	<b>Q.4 a</b>	<b>Q.5 c</b>
<b>Q.6 a</b>	<b>Q.7 b</b>	<b>Q.8 c</b>	<b>Q.9 a</b>	<b>Q.10 c</b>
<b>Q.11 d</b>	<b>Q.12 d</b>			

PRATEEK JAIN  
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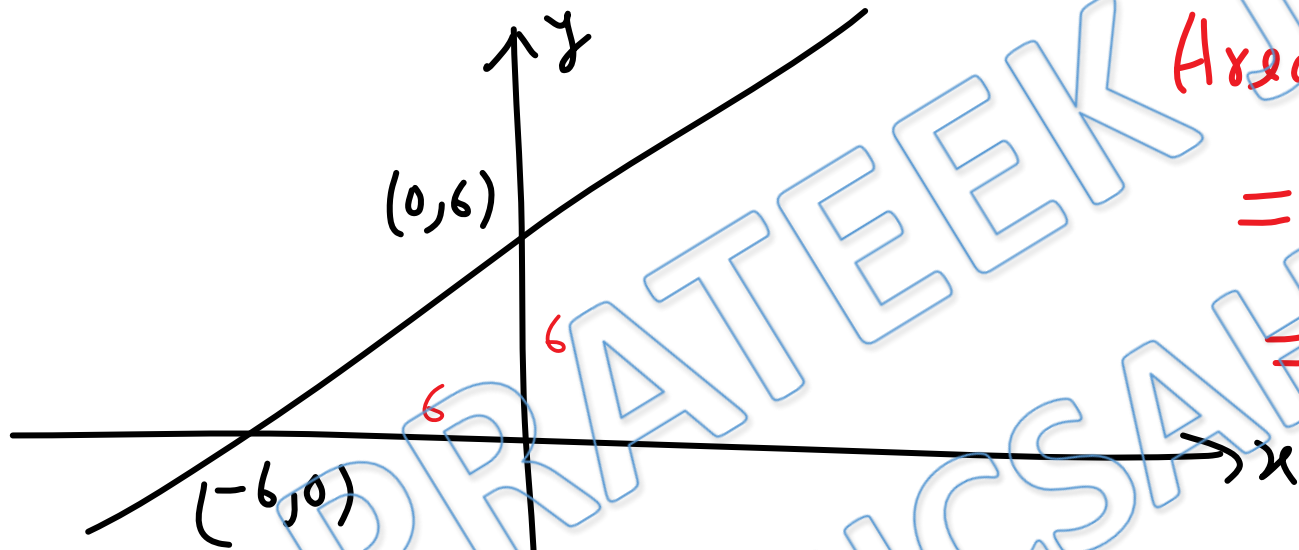
# Written Solution

**DPP-2 Basic Math: Geometry (Straight Line)**

**By Physicsaholics Team**

Solution: 1  $y - x = 6$  , at  $x = 0$  ,  $y = 6$

at  $y = 0$  ,  $x = -6$



Area of triangle

$$= \frac{1}{2} \times 6 \times 6$$

$$= 18$$

Ans (c)

Solution: 2  $3y + 4x = 12 \Rightarrow y = -\frac{4x}{3} + 4 \Rightarrow \text{Slope} = -\frac{4}{3}$

Since Second line is parallel to this line, slope of second line =  $-\frac{4}{3}$

Let Equation of second line is  $y = -\frac{4}{3}x + c$

Since line is passing through  $(3, 3)$ , at  $x = 3$ ,  $y$  must be 3.

$$3 = -\frac{4}{3} \times 3 + c \Rightarrow c = 7$$

Equation of line is  $y = -\frac{4}{3}x + 7 \Rightarrow 3y + 4x = 21$

Ans(d)

Solution: 3

$$3x + 4y = 3 \Rightarrow y = -\frac{3}{4}x + \frac{3}{4} \Rightarrow \text{Slope} = -\frac{3}{4}$$

$$6x - by = 3 \Rightarrow y = +\frac{6}{b}x + \frac{3}{b} \Rightarrow \text{Slope} = \frac{6}{b}$$

for perpendicular lines

$$m_1 m_2 = -1$$

$$\Rightarrow \left(-\frac{3}{4}\right)\left(\frac{6}{b}\right) = -1$$

$$\Rightarrow b = \frac{9}{2}$$

Ans(d)



Solution: 4

$$A(4, 3), \quad B(-3, 6)$$

$$(x_1, y_1) \quad (x_2, y_2)$$

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

$$AB = \sqrt{(-3 - 4)^2 + (6 - 3)^2}$$

$$= \sqrt{4^2 + 3^2}$$

$$= \sqrt{5^2}$$

$$AB = 5 \text{ unit}$$

Ans. a

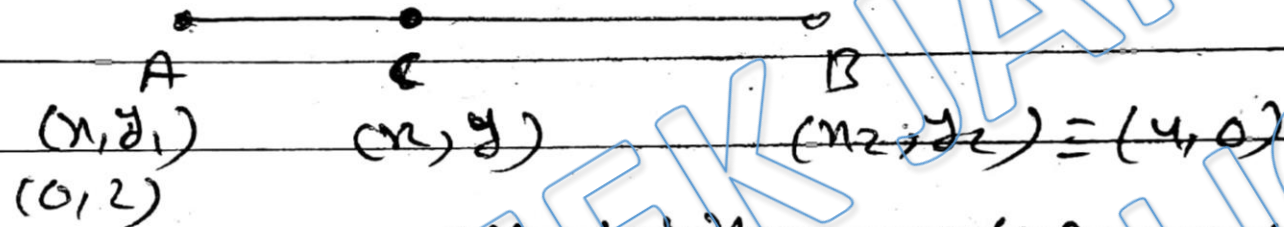


Solution: 5

$$A(0, 2) : (x_1, y_1)$$

$$B(4, 0) : (x_2, y_2)$$

$$a = 1 : \quad b = 2$$



$$x = \frac{ax_2 + bx_1}{a+b} = \frac{1(4) + 2(0)}{3}$$

$$x = \frac{4}{3}$$

$$y = \frac{ay_2 + by_1}{a+b} = \frac{1(0) + 2(2)}{3}$$

$$y = \frac{4}{3}$$

$$C : (x, y) = \left(\frac{4}{3}, \frac{4}{3}\right)$$

Ans. c

Solution: 6

$$3x + 5y - 2 = 0$$

$$5y = -3x + 2$$

$$y = -\frac{3}{5}x + \frac{2}{5}$$

By comparing with line

eq:

$$y = mx + c$$

$$\text{Slope} = m = -\frac{3}{5}$$

Ans. a

Solution: 7

$$A(5, 0) : (x_1, y_1)$$

$$B(-2, 6) : (x_2, y_2)$$

Slope of line:  $m$

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

$$m = \frac{6 - 0}{-2 - 5} = \frac{6}{-7}$$

$$m = \frac{-6}{7}$$

Ans. b

Solution: 8

$$A(3, 1) : (x_1, y_1)$$

$$B(2, -1) : (x_2, y_2)$$

Slope of line =  $m$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-1 - 1}{2 - 3} = \frac{-2}{-1}$$

$$m = 2$$

Now eq<sup>n</sup> of line!

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

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

$$\boxed{y - 2x + 5 = 0}$$

Ans. c



Solution: 9

$$l_1: 3x + 2y - 1 = 0$$

$$l_2: y = x + 2$$

Put value of  $y$  from  $l_2$   
into  $l_1$

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

$$3x + 2x + 4 - 1 = 0$$

$$5x + 3 = 0$$

$$x = -\frac{3}{5}$$

Put value of  $x$  in eq<sup>n</sup>  $l_2$

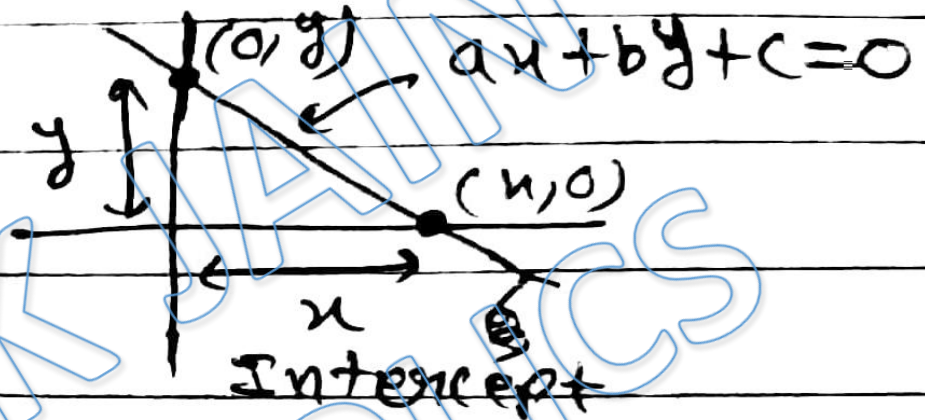
$$y = -\frac{3}{5} + 2 = \frac{7}{5}$$

$$\therefore (x, y) = \left(-\frac{3}{5}, \frac{7}{5}\right)$$

Ans. a

Solution: 10

$$2x + 4y - 7 = 0$$



$x$  - intercept, where  $y = 0$

$$\therefore 2x + 4(0) - 7 = 0$$

$$x = \frac{7}{2}$$

Ans. c



Solution: 11

$$y = m_1 x + c_1$$

$$y = m_2 x + c_2$$

will be parallel if their  
slope are same

$$m_1 = m_2$$

Ans. d

Solution: 12

Linear relation between

$x$  and  $y$  is always a  
straight line

$$\therefore (a) \quad y = 3x + 2$$

$$(b) \quad x - 5y - 1 = 0$$

$$(c) \quad x = 3y + 2$$

All are equations of  
straight line.

Ans. d

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