14-09-25-T8

Write the standard form of the equation of each line.

1) $y = 3x$

2) $y = -\frac{7}{6}x + 2$

3) $y + 3 = \frac{4}{3}(x + 3)$

4) $y + 5 = 2(x + 4)$

Write the standard form of the equation of the line through the given points.

5) through: $(-2, 1)$ and $(3, 0)$

6) through: $(3, 1)$ and $(5, 1)$

Write the standard form of the equation of the line described.

7) through: $(-1, 3)$, parallel to $y = -x$

8) through: $(1, -2)$, parallel to $y = -5x + 2$

9) through: $(-3, 1)$, perp. to $y = 2x - 4$

10) through: $(3, -2)$, perp. to $y = 4x + 1$

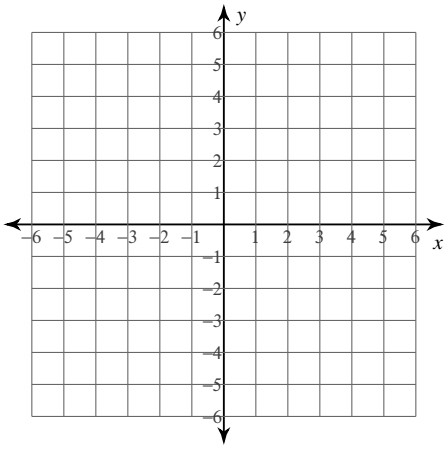
Write the slope-intercept form of the equation of the line through the given points.

11) through: $(4, -5)$ and $(-4, 0)$

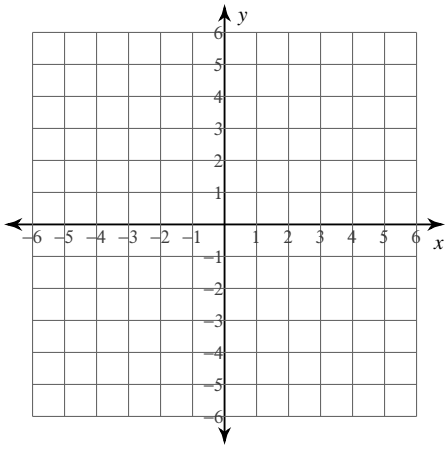
12) through: $(4, 1)$ and $(3, 0)$

Sketch the graph of each line.

13) $3x + y = 2$



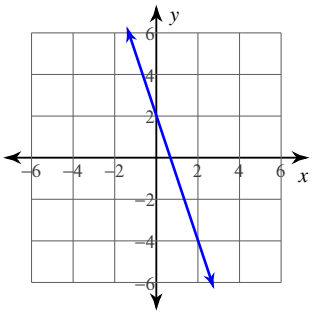
14) $3x - y = -2$



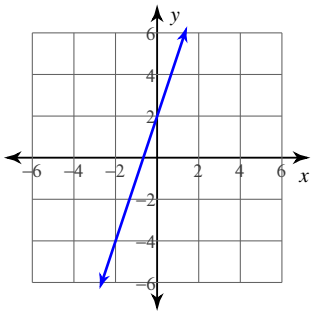
Answers to 14-09-25-T8

1) $3x - y = 0$
2) $7x + 6y = 12$
3) $4x - 3y = -3$
4) $2x - y = -3$
5) $x + 5y = 3$
6) $y = 1$
7) $x + y = 2$
8) $5x + y = 3$
9) $x + 2y = -1$
10) $x + 4y = -5$
11) $y = -\frac{5}{8}x - \frac{5}{2}$
12) $y = x - 3$

13)



14)



#6] $(3,1), (5,1)$

Get ℓ

Soln

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

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

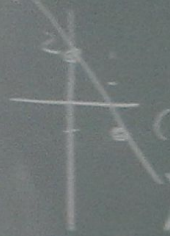
$m = \frac{1-1}{5-3}$

$m = 0$

$y - 1 = 0(x - 3)$

$\therefore \boxed{y = 1}$

$y = -3x + 2$



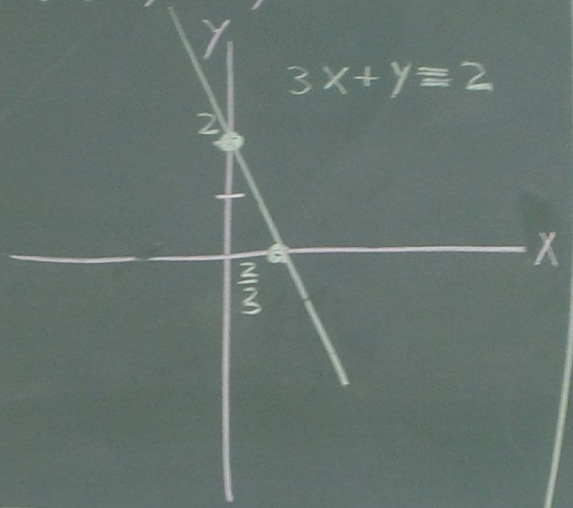
#13]

$3x + y = 2$

$x = 0,\ y = 2$

$y = 0,\ x = \frac{2}{3}$

$(0,2), (\frac{2}{3}, 0)$ on ℓ.



#7] $(-1,3)$

$\ell_1 : y = -x$

get $\ell \parallel \ell_1$.

Soln

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

$y - 3 = m(x + 1)$

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

$y - 3 = -x - 1$

$\boxed{x + y = 2}$

$y = -x$

$y = mx +$

$b = 0$

$m = -$

$(-1, 3)$

$l_1: y = -x$

$l \parallel l_1$.

SOLN

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

$y - 3 = m(x + 1)$

$y = -x$

$y = mx + b$

$b = 0$

$m = -1$

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

$y - 3 = -x - 1$

$x + y = 2$

#8 $P(1, -2)$

$l_1: y = -5x + 2$

Get $l \parallel l_1$ — Inspection.

SOLN

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

$y + 2 = m(x - 1)$

$y + 2 = -5(x - 1)$

$m = -5$ Because Parallel

$y + 2 = -5x + 5$

$\therefore 5x + y = 3$

9] $(-3,1)$

$l_1: y = 2x - 4$

Get $l \perp l_1$

Soln

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

? $y + 3 = m(x - 1)$

$2m = -1$

$m = \frac{-1}{2}$

$y + 3 = \frac{-1}{2}(x - 1)$

$2y + 6 = -(x - 1)$

$2y + 6 = -x + 1$

$x + 2y = -5$

$l_1 \perp l$, so

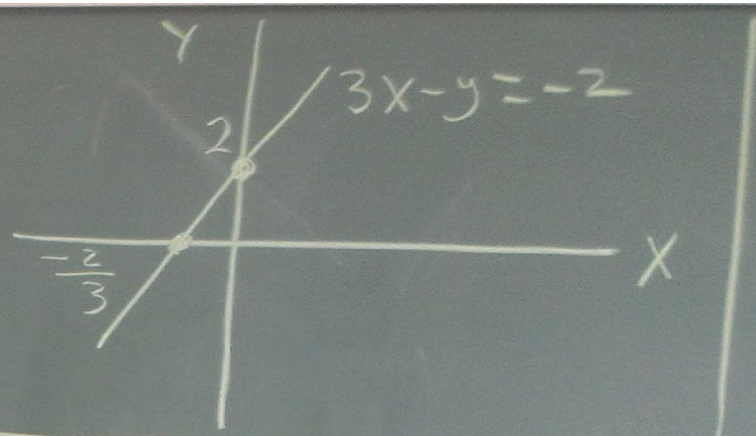
$m\,m_1 = -1$

14]

$3x - y = -2$

$x = 0,\ y = 2$

$x = \frac{-2}{3},\ y = 0$



$y - 1 = m(x + 3)$

$2m = -1$

$m = \frac{-1}{2}$

$y - 1 = \frac{-1}{2}(x + 3)$

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

$2y - 2 = -x - 3$

$\therefore x + 2y = -1$

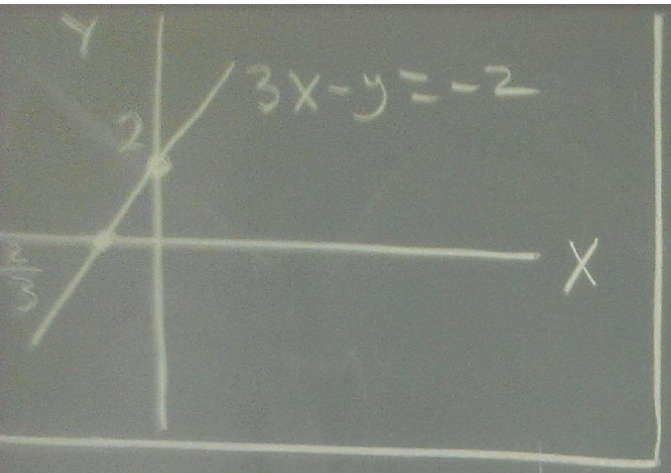
#5

Soln

5

S

$\therefore x$



$y-1=m(x+3)$

$2m=-1$

$m=\frac{-1}{2}$

$y-1=\frac{-1}{2}(x+3)$

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

$2y-2=-x-3$

$x+2y=-1$

#5 $(-2;1),(3,0)$

Get l.

Soln

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

$y-1=m(x+2)$

$m=\frac{0-1}{3+2}$

$m=\frac{-1}{5}$

$y-1=\frac{-1}{5}(x+2)$

$5y-5=-(x+2)$

$5y-5=-x-2$

$\therefore x+5y=3$

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

~~1-6~~

8] all

] #1-8

ℓ through $P(-2, 8)$, $Q(-2, -5)$

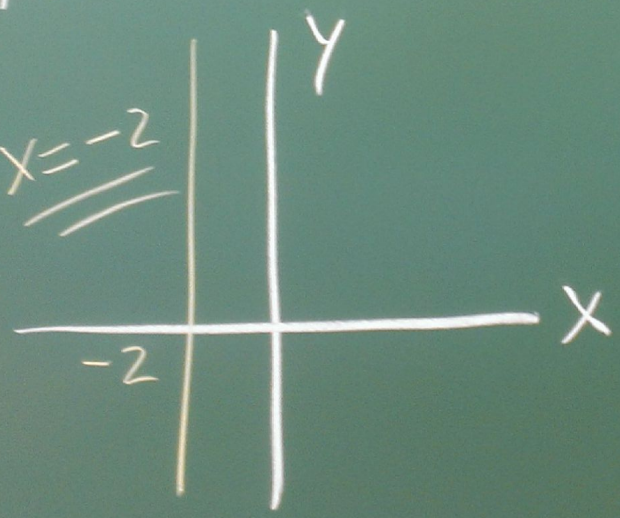
$y - y_1 = m(x - x_1)$

$y - 8 = m(x + 2)$

$m = \frac{-5-8}{-2+2} =$ undefined

Now this is useless.

Since m undef, ℓ Parallel to y-axis



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* Correct Workbook (Friday)