Supplementary Worksheet

1. Determine the equation of the line that passes through

a) point $\left(-\dfrac{1}{3}, 7\right)$ and is parallel to the line whose equation is $-x - 7 = 0$.

Clearly show all your work.   x only present ∴ vertical line

ℓ_1

$-x - 7 = 0$

$-x = 7$

$x = -7$

ANS: $\boxed{x = \dfrac{-1}{3}}$

Tania:
I have sketch the line (vertical) given
them and the line ∥ to it,
"get the answer" but passing thru the point.

This question
is worth 10%.
Easy to memorize
how to
even if they don't
understand it!

(left margin, vertical text:) Since the line $-x - 7 = 0$ is vertical, the line parallel to it and passing through $(-\frac{1}{3}, 7)$ must also be vertical with the eqn $\boxed{x = \frac{1}{3}}$

b) point $\left(-2, \dfrac{4}{5}\right)$ and is parallel to the line whose equation is $-\dfrac{7}{6}y + 7 = 0$.

Clearly show all your work.   y only present ∴ horizontal line

$-\dfrac{7}{6}y + 7 = 0$

$\left(-\dfrac{6}{7}\right) -\dfrac{7}{6}y = -7\left(-\dfrac{6}{7}\right)$

$y = 6$

ANS: $\boxed{y = \dfrac{4}{5}}$

Since $-\dfrac{7}{6}y + 7 = 0$ is a horizontal line, the line parallel to it and passing through $(-2, \frac{4}{5})$ must also be horizontal and has the equation $\boxed{y = \dfrac{4}{5}}$

c) point $\left(-\frac{1}{4}, 3\right)$ and is parallel to the line whose equation is $-7x - 11 = 0$.

Clearly show all your work.

$$-7x - 11 = 0$$

$$\frac{-7x}{-7} = \frac{11}{-7}$$

$$x = \frac{-11}{7}$$

ANS : $\boxed{x = -\frac{1}{4}}$

d) point $\left(-3, \frac{1}{3}\right)$ and is parallel to the line whose equation is $-\frac{4}{3}y + 4 = 0$.

Clearly show all your work.

$$-\frac{4}{3}y + 4 = 0$$

$$\left(-\frac{3}{4}\right) -\frac{4}{3}y = -4\left(\frac{-3}{4}\right)$$

$$y = 3$$

ANS : $\boxed{y = \frac{1}{3}}$

e) point $\left(-\dfrac{3}{5}, 6\right)$ and is parallel to the line whose equation is $-2x - 4 = 0$.

Clearly show all your work.

$$-2x - 4 = 0$$

$$\dfrac{-2x}{-2} = \dfrac{4}{-2}$$

$$x = -2$$

ANS: $\left(x = \dfrac{-3}{5}\right)$

f) point $\left(-4, \dfrac{3}{4}\right)$ and is parallel to the line whose equation is $-\dfrac{2}{3}y + 6 = 0$.

Clearly show all your work.

$$-\dfrac{2}{3}y + 6 = 0$$

$$\left(\dfrac{-3}{2}\right) -\dfrac{2}{3}y = -6\left(\dfrac{-3}{2}\right)$$

$$y = 9$$

ANS: $\left(y = \dfrac{3}{4}\right)$

g) point $\left(-\dfrac{1}{5}, 2\right)$ and is parallel to the line whose equation is $-3x - 7 = 0$.

Clearly show all your work.

$$-3x - 7 = 0$$

$$\dfrac{-3x}{-3} = \dfrac{7}{-3}$$

$$x = -\dfrac{7}{3}$$

ANS : $x = -\dfrac{1}{5}$

h) point $\left(-\dfrac{2}{5}, \dfrac{1}{2}\right)$ and is parallel to the line whose equation is $-\dfrac{5}{4}y + 10 = 0$.

Clearly show all your work.

$$-\dfrac{5}{4}y + 10 = 0$$

$$\left(\dfrac{-4}{5}\right) -\dfrac{5}{4}y = -10\left(\dfrac{-4}{5}\right)$$

$$y = 8$$

ANS : $y = \dfrac{1}{2}$

i)   point $\left(-\dfrac{5}{6}, -2\right)$ and is parallel to the line whose equation is $-8x - 16 = 0$.

Clearly show all your work.

$$-8x - 16 = 0$$

$$-8x = 16$$

$$\frac{-8x}{-8} = \frac{16}{-8}$$

$$x = -2$$

ANS: $\boxed{x = \dfrac{-5}{6}}$

j)   point $\left(-\dfrac{1}{4}, -\dfrac{4}{7}\right)$ and is parallel to the line whose equation is $-\dfrac{7}{2}y + 14 = 0$.

Clearly show all your work.

$$\frac{-7}{2}y + 14 = 0$$

$$\left(\frac{-2}{7}\right)\frac{-7}{2}y = -14\left(\frac{-2}{7}\right)$$

$$y = 4$$

ANS: $\boxed{y = \dfrac{-4}{7}}$

NAME: _Shanna_

DATE: _____

Supplementary Worksheet

Multiple choice: Choose the correct answer.

2. Which of the following lines is concurrent with l_1: $\dfrac{2y}{2} = \dfrac{5}{2}$ in its intercept?

$= $ one
point in
common

$y = 2\frac{1}{2} \leftarrow$ horizontal line

a) $y = \dfrac{5}{2}x$

b) $2y - 4x = 5$

$\dfrac{2y}{2} = \dfrac{4x}{2} + \dfrac{5}{2}$

c) $2y + 5 = 0$

d) $5y - 2x = 25$

3. Which of the following lines is concurrent with l_1: $\dfrac{5y}{5} = \dfrac{10}{5}$ in its intercept?

$y = 2$

a) $-10x + 5y - 1 = 0$

b) $5y + 10 = 0$

c) $2y - x = 1$

d) $-x + 5y - 10 = 0$

$\dfrac{5y}{5} = \dfrac{10}{5} + x$

4. Which of the following lines is concurrent with l_1: $y = \dfrac{7}{2}$ in its intercept?

a) $2y - 7x = 4$

b) $\dfrac{7}{2}y = 1$

c) $y = \dfrac{7}{2}x$

(d) $2y - 2x = 7$ $\dfrac{2y}{2} = \dfrac{2x}{2} + \dfrac{7}{2}$

5. Which of the following lines is concurrent with l_1: $\dfrac{2y}{2} = \dfrac{6}{2}$ in its intercept?

(a) $-2x + y - 3 = 0$ $y = 2x + 3$ $y = 3$

b) $-3x + y - 1 = 0$

c) $2y + 6 = 0$

d) $y = 3x$

6. Which of the following lines is concurrent with l_1: $\dfrac{3y}{3} = \dfrac{12}{3}$ in its intercept?

$$y = 4$$

a) $3y + 12 = 0$

$$\dfrac{3y}{3} = \dfrac{-12}{3}$$

b) (circled) $y - x = 4$

$$y = x + 4$$

c) $y - 4x = 1$

d) $x - 4 = 0$

7. Which of the following lines is concurrent with l_1: $\dfrac{2y}{2} = \dfrac{10}{2}$ in its intercept?

$$y = 5$$

a) $5y - 25x = 1$

b) $y = \dfrac{2}{10}x$

c) (circled) $3y - 2x = 15$

$$\dfrac{3y}{3} = \dfrac{2x}{3} + \dfrac{15}{3}$$

d) $2y + 10 = 0$

$\overbrace{}$
x   y

8. Determine what line is concurrent with l_1: $-\dfrac{4}{3}x = 4$ in point $(-3, -3)$?

a) $y = -3x - 3$

$$\left(\dfrac{-3}{4}\right)\left(\dfrac{-4}{3}x\right) = 4\left(\dfrac{-3}{4}\right)$$

b) $y - x + 6 = 0$

$x = -3$ ← Vertical line containing all points with x-values of $x = -3$ $(-3, ?)$

c) $3y - 2x - 15 = 0$

(d) $y - 2x = 3$

$-3 - 2(-3) =$
$-3 + 6 = 3$

9. Determine what line is concurrent with l_1: $-\dfrac{9}{4}x = 9$ in point $(-4, -2)$?

(a) $4y - x + 4 = 0$

$4(-2) + 4 + 4 = 0$
$-8 + 8 = 0$

b) $y = -4x - 2$

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

d) $4y - 3x - 20 = 0$

10. Determine what line is concurrent with l_1: $-\dfrac{7}{5}x = 7$ in point $(-5,-3)$?

a) $3y - 2x + 9 = 0$

b) $2x - 2y = -16$
    $-10 + 6$

c) $-4x + 5y - 5 = 0$
    $-4(-5) + 5(-3) - 5 = 0$
    $20 - 15 - 5$

d) $y = -5x - 3$

11. Determine what line is concurrent with l_1: $-\dfrac{5}{2}x = 5$ in point $(-2,3)$?

a) $2y - x = 8$
    $2(3) + 2 =$

b) $3y - 2x + 12 = 0$

c) $2y - 3x = 0$

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

12. Determine what line is concurrent with l_1: $-\dfrac{11}{6}x = 11$ in point $(-6,4)$?

a) $3x + 4y + 12 = 0$

      $-18 + 16$

b) $5x + 6y + 6 = 0$

      $-30 + 24 + 6 =$

c) $3y - 2x = 0$

d) $-6x + 4y = 0$

13. Determine what line is concurrent with l_1: $-\dfrac{8}{7}x = 8$ in point $(-7,-2)$?

a) $-2x - 5y = 4$

      $-2(-7) - 5(-2) =$

      $14 + 10$

b) $-x - 2y = 3$

      $7 - 2(-2) =$

      $7 + 4$

c) $2y - 5x + 4 = 0$

      $2(-2) - 5(-7) + 4$

      $-4 + 35 + 4$

d) $7y - 5x = 21$

      $7(-2) - 5(-7) =$

      $-14 + 35 =$