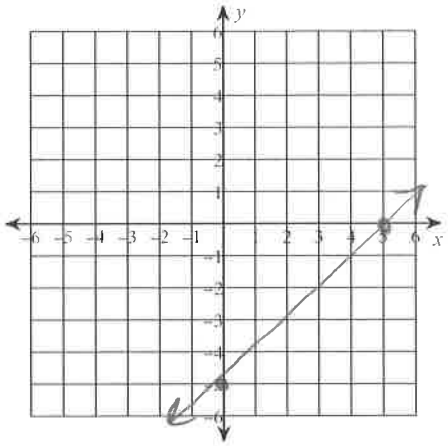
Algebra 1 Name Key

WS PC #2 Review

Find the x- and y-intercepts for each. Write the intercepts as an ordered pair. Then graph using the intercepts.

1) $x - y = 5$



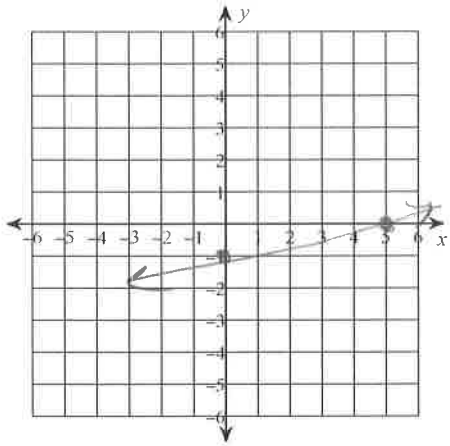
$x = 5$ $\quad -y = 5$

$(5,0)$ $\quad \frac{-y}{-1} = \frac{5}{-1}$

$y = -5$

$(0,-5)$

2) $x - 5y = 5$

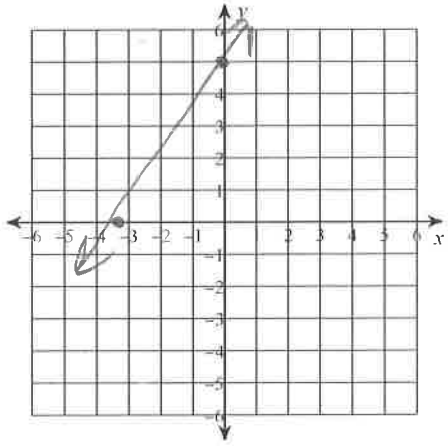


$x = 5$ $\quad \frac{-5y}{-5} = \frac{5}{-5}$

$(5,0)$ $\quad y = -1$

$(0,-1)$

3) $3x - 2y = -10$

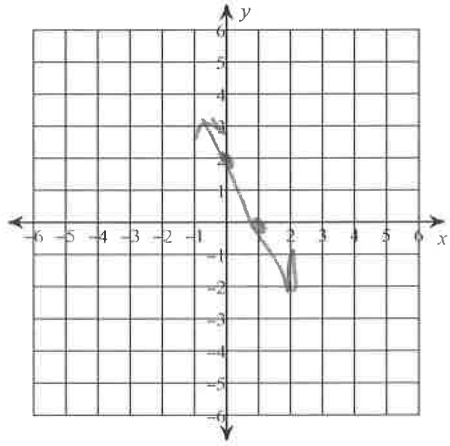


$\frac{3x}{3} = \frac{-10}{3}$ $\quad \frac{-2y}{-2} = \frac{-10}{-2}$

$x = \frac{-10}{3}$ $(-3.\overline{3})$ $\quad y = 5$

$\left(\frac{-10}{3}, 0\right)$ $\quad (0,5)$

4) $2x + y = 2$



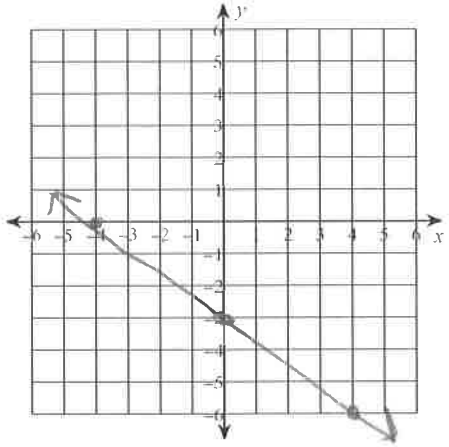
$\frac{2x}{2} = \frac{2}{2}$ $\quad y = 2$

$x = 1$ $\quad (0,2)$

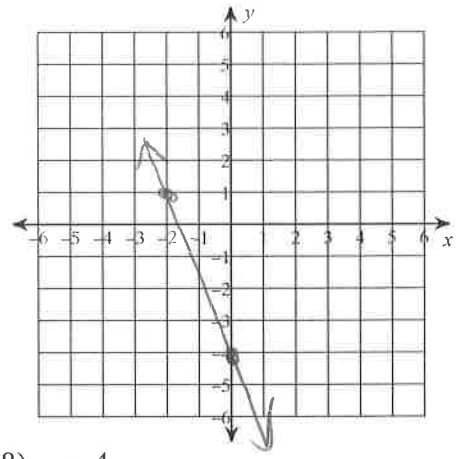
$(1,0)$

Graph each.

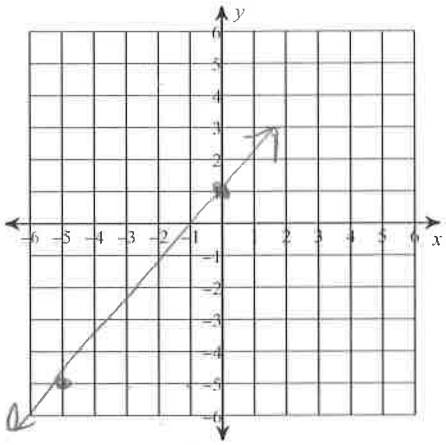
5) $y = -\frac{3}{4}x - 3$



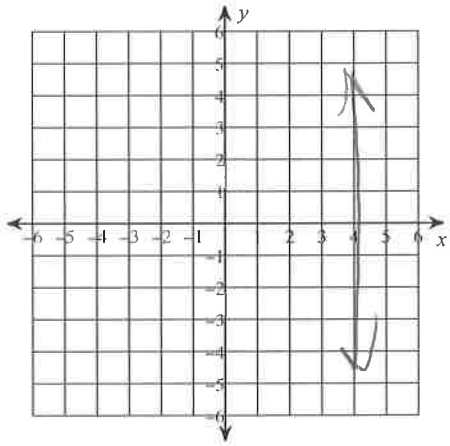
6) $y = -\frac{5}{2}x - 4$



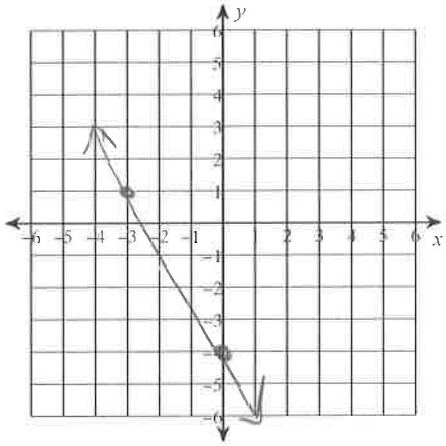
7) $y = \frac{6}{5}x + 1$



8) $x = 4$



9) $5x + 3y = -12$



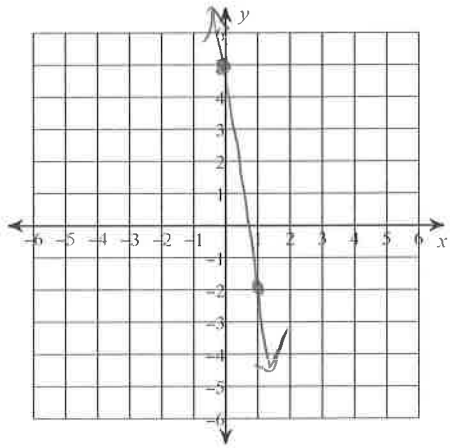
$5x + 3y = -12$

$-5x \qquad -5x$

$\frac{3y}{3} = -\frac{5}{3}x - \frac{12}{3}$

$y = -\frac{5}{3}x - 4$

10) $7x + y = 5$

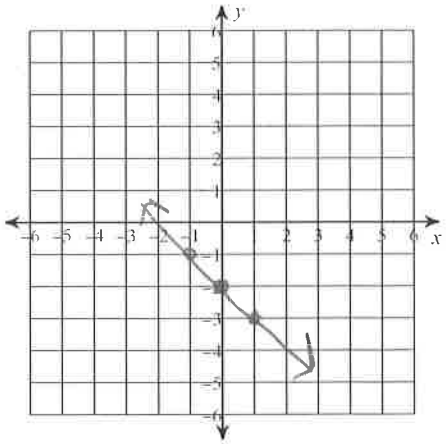


$7x + y = 5$

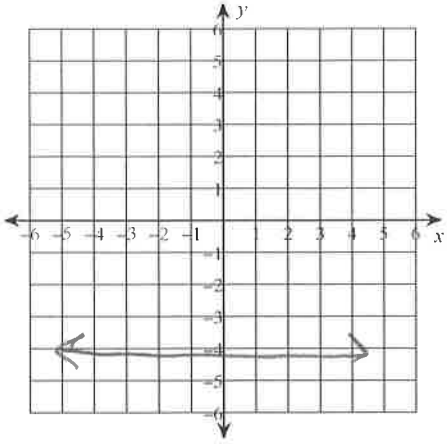
$-7x \qquad -7x$

$y = -\frac{7}{1}x + 5$

11) $y = -x - 2$



12) $y = -4$



Describe the transformation for each function when compared to the parent function $f(x) = x$.

13) $g(x) = -\frac{2}{3}x - 6$

reflected
vert. comp.
down 6

14) $h(x) = \frac{7}{5}x + 10$

vert. stretch
up 10

15) $d(x) = 4x - 1$

vert. stretch
down 1

16) $a(x) = -2x$

reflected
vert. stretch

Write a function to represent the transformation described below.

17) translated 5 units up, vertically stretched by 6, reflected in the y-axis

$y = -6x + 5$

18) translated down 8 units, vertically compressed by your choice

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

19) vertically compressed by $-\frac{2}{7}$, translated down 2 units, reflected in the y-axis

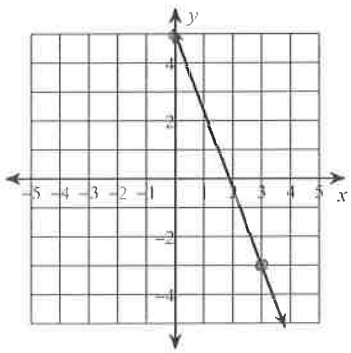
$y = -\left(\frac{-2}{7}\right)x - 2$ $y = \frac{2}{7}x - 2$

20) vertically stretched by your choice, translated up 17 units

$y = 3x + 17$

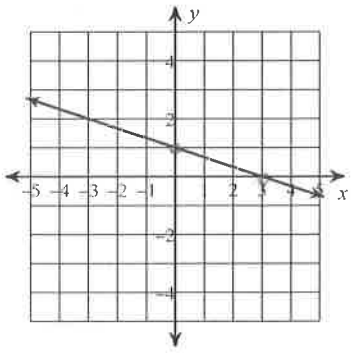
Write the slope-intercept form of the equation of each line.

21)

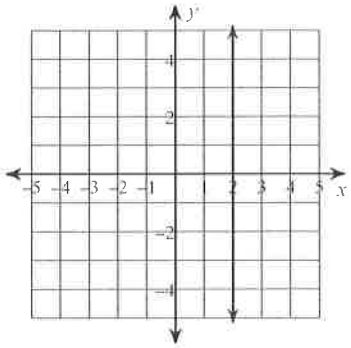


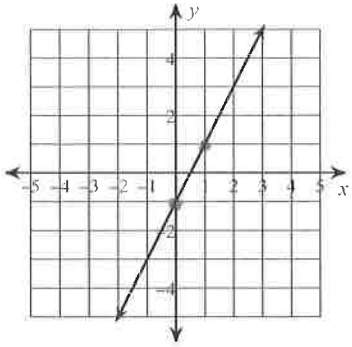
$y = \frac{-8}{3}x + 5$

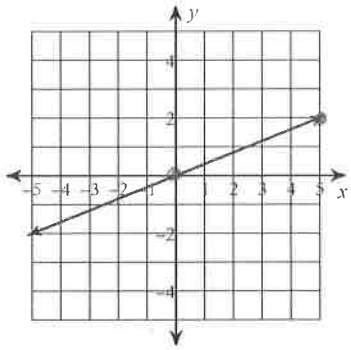
22)

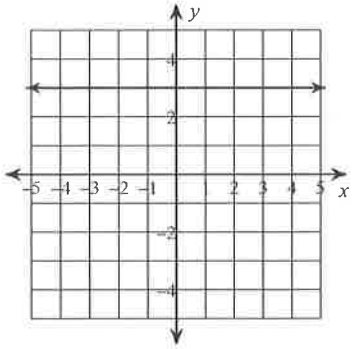


$y = \frac{-1}{3}x + 1$

23)  $x = 2$

24)  $y = 2x - 1$

25)  $y = \frac{2}{5}x$

26)  $y = 3$

Simplify. Your answer should contain only positive exponents.

27) $-3x^3 \cdot 4x^4y^4$ $-12x^7y^4$

28) $3a^3b^{-3} \cdot 2a^2b^3 \cdot 4a^3b^3$ $24a^8b^3$

29) $(3y^4)^3$ $3^3y^{12} = 27y^{12}$

30) $(2x^4y^4)^3$ $2^3x^{12}y^{12} = 8x^{12}y^{12}$

31) $\frac{9a^5b^4}{6a^{-3}b^9}$ $\frac{9a^5a^3b^4}{6b^9} = \frac{3a^8}{2b^5}$

32) $\frac{x^{-2}y^2}{5x^3y^{-3}}$ $\frac{y^2y^3}{5x^2x^3} = \frac{y^5}{5x^5}$

33) $\frac{4x^2y^{-1}}{y^{-4}}$ $\frac{4x^2y^4}{y^1} = 4x^2y^3$

34) $\frac{u^3v^3}{u^{-2}}$ $u^3v^3u^2 = u^5v^3$

35) $\frac{(2x^3y^{-3})^2}{x^2y^4}$ $\frac{2^2x^6y^{-6}}{x^2y^4} = \frac{4x^6}{x^2x^6y^4} = \frac{4}{x^2y^4}$

36) $\frac{n^3}{(2n^{-4})^3}$ $\frac{n^3}{2^3n^{-12}}$ $\frac{n^3n^{12}}{8} = \frac{n^{15}}{8}$

37) $\left(\frac{2x^4y^2}{x^{-1}y^{-4}}\right)^2$ $\frac{2^2x^8y^4}{x^{-2}y^{-8}} = 4x^8y^4x^2y^8 = 4x^{10}y^{12}$

38) $\frac{(y^4)^3}{x^3y^{-4}}$ $\frac{y^{12}}{x^3y^{-4}} = \frac{y^{12}y^4}{x^3} = \frac{y^{16}}{x^3}$