

A # 34

p. 409-410 #19-22, 29-32, 45-46

19. $y < 3x + 5$

$< \rightarrow$ dotted line

$m = 3$

y-int: $(0, 5)$

check $(0, 0)$

$0 < 3(0) + 5$

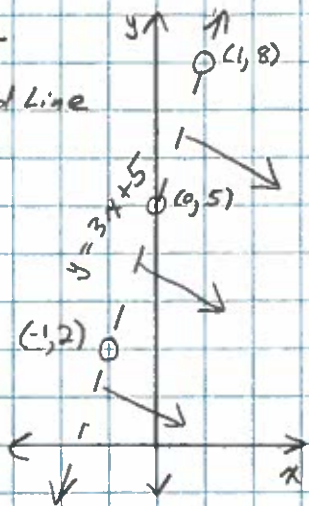
$0 < 5$ True,

Shade below

check $(0, 6)$

$6 < 3(0) + 5$

$6 < 5$ False



20. $y \geq -2x + 8$

$\geq \rightarrow$ solid line

$m = -2$

y-int: $(0, 8)$

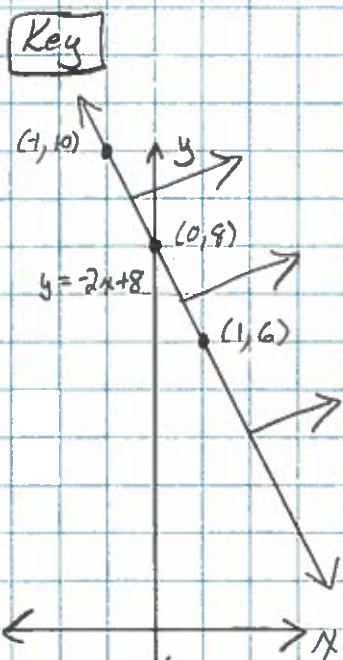
check $(0, 0)$ $0 \geq -2(0) + 8$

$0 \geq 8$ False

check $(0, 9)$ $9 \geq -2(0) + 8$

$9 \geq 8$ True,

Shade above!



21. $x + y < -8$

$< \rightarrow$ dotted line

$y = -x + (-8)$

$m = -1$

y-int: $(0, -8)$

check $(0, 0)$

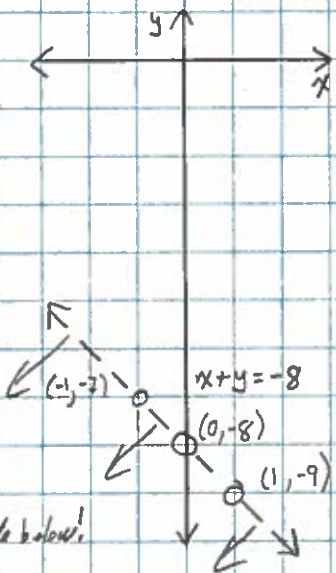
$0 + 0 < -8$

$0 < -8$ False

check $(0, -9)$

$0 + (-9) < -8$

$-9 < -8$ True, shade below!



22. $x - y \leq -11$

$\leq \rightarrow$ solid line

$x - y = -11$

$-y = -x + (-11)$

$y = x + 11$

$m = 1$ y-int: $(0, 11)$

check $(0, 0)$

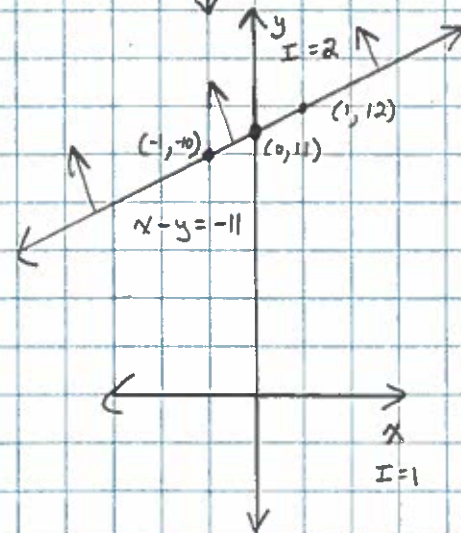
$0 - 0 \leq -11$

$0 \leq -11$ False

check $(0, 12)$

$0 - 12 \leq -11$

$-12 \leq -11$ True, shade above!



29. $y < -3$

$< \rightarrow$ dotted line

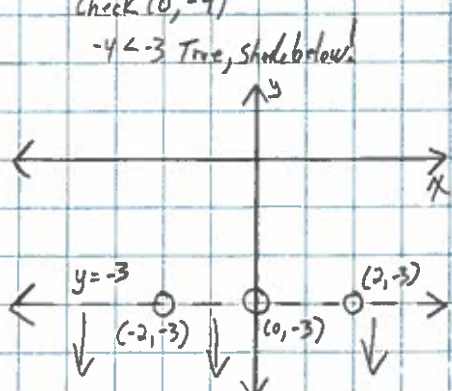
$m = 0$ y-int: $(0, -3)$

check $(0, 0)$

$0 < -3$ False

check $(0, -4)$

$-4 < -3$ True, shade below!



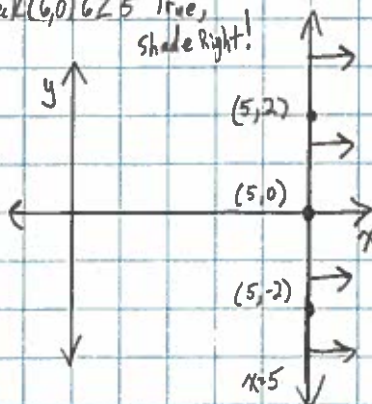
30. $x \geq 5$

$\geq \rightarrow$ solid line

m is undefined (vertical line)

check $(0, 0)$ $0 \geq 5$ False

check $(6, 0)$ $6 \geq 5$ True, shade right!



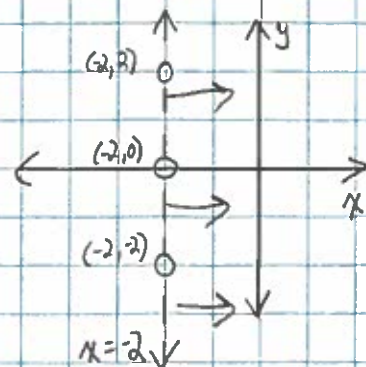
31. $x > -2$

$> \rightarrow$ dotted line

m is undefined (vertical line)

check $(0, 0)$ $0 > -2$ True, shade right!

check $(-3, 0)$ $-3 > -2$ False



A #34 continued

p. 409-410 #32, 45-46

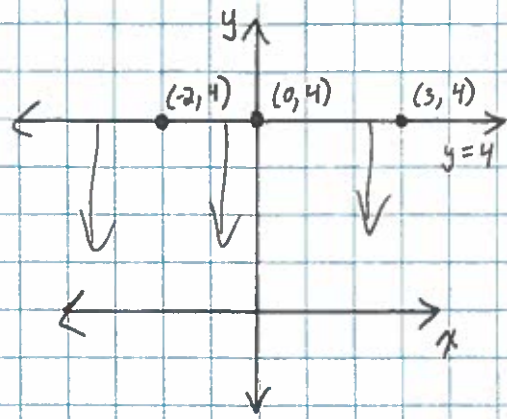
32. $y \leq 4$

$\leq \rightarrow$ solid line

$m=0$ y-int: $(0, 4)$

check $(0, 0)$ $0 \leq 4$ True, shade below!

check $(0, 5)$ $5 \leq 4$ False



45. $(-1, -2)$ $(6, 3)$

① $m = \frac{\Delta y}{\Delta x} = \frac{3 - (-2)}{6 - (-1)} = \frac{5}{7}$

$y = mx + b$

$-2 = 1\left(\frac{5}{7}\right) + b$

$-2 = \frac{5}{7} + b$

$b = -\frac{9}{7}$

Boundary Line: $y = \frac{5}{7}x + \left(-\frac{9}{7}\right)$

② Solid line $\rightarrow > \text{ or } <$

Use $(4, 0)$

$0 \leq \frac{5}{7}(4) + \left(-\frac{9}{7}\right)$

$0 \leq \frac{20}{7} + \left(-\frac{9}{7}\right)$

$0 \leq \frac{11}{7}$

Inequality: $y \leq \frac{5}{7}x + \left(-\frac{9}{7}\right)$

46. $(-4, 0)$ $(0, 2)$

① $m = \frac{\Delta y}{\Delta x} = \frac{2 - 0}{0 - (-4)} = \frac{2}{4} = \frac{1}{2}$

$b = 2$

Boundary Line: $y = \frac{1}{2}x + 2$

② Dotted Line $\rightarrow > \text{ or } <$

Use $(0, 3)$

$3 \not> \frac{1}{2}(0) + 2$

$3 \not> 0 + 2$

$3 \not> 2$

Inequality: $y > \frac{1}{2}x + 2$