

Unit 2

(34) see class notes from 1/23

(35) $2x - 3y = 9$
 $x + 5y = -2$ → Substitution $x = -2 - 5y$ plug into 1st equation $2(-2 - 5y) - 3y = 9$

$$-4 - 10y - 3y = 9$$

$$-4 - 13y = 9$$

$$-13y = 13$$

$$\boxed{y = -1}$$

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

$$x = -2 + 5$$

$$\boxed{x = 3}$$

Solution (3, -1)

(36) $6x + 9y = -45$
 $2x + 3y = -15$

Elimination

∴ To eliminate y , let's multiply 2nd equation by -3 .

$$\begin{array}{r} 6x + 9y = -45 \\ -6x - 9y = 45 \\ \hline \end{array}$$

Add: $0 + 0 = 0$

∴ infinitely many solutions
(all real numbers)

(37) $2a + b = -3$
 $a - b = 3$

$(-2, 1)$ if $a = -2$
 $b = 1$

1st equation becomes $2(-2) + 1 = -3$

$$-4 + 1 = -3$$

$$-3 = -3 \checkmark$$

2nd equation becomes $-2 - 1 = 3$

$$-3 = 3 \text{ false.}$$

Therefore, $(-2, 1)$ is not a solution.

38. Since the graph is a solid line the only possible choices are B and D.

To check, pick a point on the shaded area. Let's pick (9,0). Plug into the inequalities and see which one is true.

$$B) y \geq 3x - 1 \quad 0 \geq 3 \cdot 9 - 1$$

$$0 \geq -1 \quad \text{true}$$

\therefore B is the right choice

39) write the equations of the 2 lines using slope intercept formula. See which choice matches your equations.

Switch to standard form if necessary.

$$\begin{aligned} 2c - d &= 7 \cdot 2 \\ 5c + 2d &= 4 \end{aligned}$$

$$\begin{aligned} 4c - 2d &= 14 \\ 5c + 2d &= 4 \end{aligned}$$

$$9c = 18$$

$$c = 2$$

$$5 \cdot 2 + 2d = 4$$

$$10 + 2d = 4$$

$$2d = -6$$

$$d = -3$$

B

43) the 2 equations should be the same line.

in choice (A) when you multiply top equation by 2 you get the bottom one.

$$\begin{cases} \frac{x}{3} + \frac{y}{4} = 5 & | \cdot 12 \\ \frac{x}{6} - \frac{y}{12} = 0 & | \cdot 12 \end{cases}$$

eliminate fractions

$$\begin{cases} 4x + 3y = 60 & \text{eliminate } y \\ 2x - y = 0 & | \cdot 3 \text{ add} \end{cases}$$

$$\rightarrow \begin{cases} 4x + 3y = 60 \\ 6x - 3y = 0 \end{cases}$$

add

$$10x = 60$$

$$\rightarrow x = 6$$

D

45

x	y	$8x - 4y$
-4	4	$8(-4) - 4(4) = -32 - 16 = -48$
$\frac{3}{2}$	2	$8(\frac{3}{2}) - 4 \cdot 2 = 12 - 8 = 4$
1	$-\frac{5}{2}$	$8(1) - 4(-\frac{5}{2}) = 8 + 10 = 18$ * maximum
-3	0	$8(-3) - 4(0) = -24$

C

46 pick a point on the shaded area and check which inequalities are true.

$(-3, -1)$ makes both inequalities in c) true.

C

47

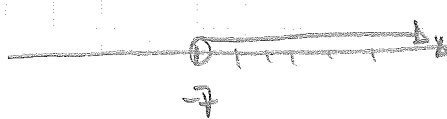
D.

48

$$-2.3 < 4 + 0.9y$$

$$\frac{-6.3}{0.9} < \frac{0.9y}{0.9}$$

$$-7 < y$$



A