Unit 1 EOC Review Session #1- ANSWERS
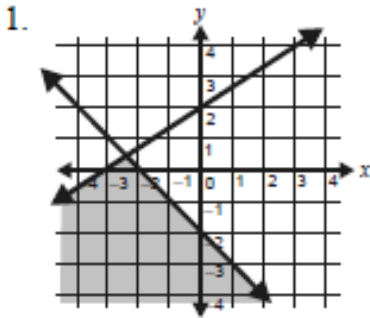
Pg. 64 #1   No, Clive will have $270. $900 - 35x \geq 300$

Pg. 64 #2   # of minutes = 47; constraints $x \geq 0 \ and \ x \geq -2$

Pg. 64 #3   3 books; $7.99 + 12.99x \leq 50$

Pg. 57 # 10 $y = \frac{28x+16}{9}$

Pg. 57 #31 $C = \frac{5(F-32)}{9}$

Pg. 65 #26 $n = -22$

Pg. 65 # 28 $x \geq \frac{-5}{3}$

Pg. 65 #34 $n = 9$

Pg. 156 # 19   "Intersecting" Intersection point: (3, -1)

Pg. 164 # 4   adults = 122   children = 50

Pg. 164 #5   dozens of eggs = 9   bags of grain = 45

Pg. 164 # 6   Lauren did not perform her chores 3 times.

Pg. 6 #26   B

Pg.168 #1

1.

WORKED OUT:

① Clive starting amount = $900
ending amount ≥ 300
takes out $35 a week   (only for 18 weeks)

inequality → $\boxed{900 - 35x \geq 300 \text{ where } x \leq 18}$

solve = $900 - 35x \geq 300$
$-900 \downarrow -900$

$\dfrac{-35x}{-35} \geq \dfrac{-600}{-35}$ ← (divide by a negative so flip the sign!)

18
$\times 35$
$= 270$

$900 -$ $= 270$

$x \leq 17.143...$

No ~~Yes~~, Clive will ⁿᵒᵗ reach his goal. He will have $270.

② $\boxed{69 + \sqrt{2+x} = 76}$ $x = \#\text{ of mins}$

equation →

$69 + \sqrt{2+x} = 76$
$-69 \phantom{+ \sqrt{2+x} =} -69$

$(\sqrt{2+x})^2 = (7)^2$

$2 + x = 49$
$-2 -2$

$\boxed{x = 47 \text{ mins}}$

answer →

constraints: $x \geq -2$
b/c anything less than -2
will make the square root $(-)$
Also a you can't have negative
minutes so $x \geq 0$

③

$$7.99 + 12.99x \leq 50$$

1-time shipping   per pack   ↑ gift card

$$7.99 + 12.99x \leq 50$$
$$-7.99 \qquad\qquad -7.99$$

$$\frac{12.99x}{12.99} \leq \frac{42.01}{12.99}$$

$$x \leq 3.234\ldots$$

Brett can buy 3 books for a total of $46.96

10.) $7x + 4 = \frac{9y}{4}$ solve for y

1) Multiply by 4.

$$4(7x + 4) = 9y$$

2) Divide by 9.

$$\boxed{\frac{4(7x+4)}{9} = y}$$ or $\boxed{y = \frac{28x + 16}{9}}$

③1.) $F = \frac{9}{5}C + 32$ for C.

1) subtract 32

$$F - 32 = \frac{9}{5}C$$

2) Multiply by reciprocal ($\frac{5}{9}$)

$$\boxed{\frac{5(F-32)}{9} = C}$$ or $\boxed{C = \frac{5F - 160}{9}}$

26) $\dfrac{5(n+4)}{3} = n-8$

1) multiply by 3

$5(n+4) = 3(n-8)$

2) Distribute $5n + 20 = 3n - 24$

3) combine "x;" $\underline{-3n \qquad\qquad -3n}$

4) solve for "x" $2n + 20 = -24$

$\underline{\qquad -20 \qquad -20 \qquad}$

$\dfrac{2n}{2} = -\dfrac{44}{2}$ $\boxed{n = -22}$

28.) $2(3x - 1) \geq 3x - 7$

1) distribute $6x - 2 \geq 3x - 7$

2) combine "x;" $\underline{-3x \qquad\qquad -3x}$

3) Isolate "x" $3x - 2 \geq -7$

4) solve for "x" $\underline{\quad +2 \qquad +2 \quad}$ $\boxed{x \geq -\dfrac{5}{3}}$

$\dfrac{3x}{3} \geq \dfrac{-5}{3}$

34) $\sqrt{3n+9} - 4 = 2$

$\underline{\qquad\qquad +4 \quad +4}$

1) Isolate (x)

2) undo $\sqrt{\ }$ with x^2 $\sqrt{3n+9} = 6$

$\sqrt{3n+9} = 6^2$

$3n + 9 = 6^2$

$3n + 9 = 36$

$\underline{\quad -9 \qquad -9}$

$\dfrac{3n}{3} = \dfrac{27}{3}$ $\boxed{n = 9}$

$$-2x = y - 5 \rightarrow \quad y = \boxed{-2x + 5}$$
$$x - 5 = 2y \rightarrow \quad x - 5 = 2y$$

Substitution Method:

$$x - 5 = 2(-2x + 5) \qquad\qquad y = -2(3) + 5$$
$$\underline{\begin{array}{cc} x - 5 = -4x + 10 \\ +5 \qquad\qquad +5 \end{array}}$$

$$y = -6 + 5$$
$$\boxed{y = -1}$$

$$\underline{\begin{array}{cc} 1x = -4x + 15 \\ +4x \quad +4x \end{array}}$$

$$\boxed{(3, -1)}$$

$$5x = 15$$
$$\boxed{x = 3} \qquad \boxed{\text{Intersecting}}$$

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pg. 164 #4

Income! 476 $4.00 = children $8.00 = adults   172 tickets sold

# of kids + # of adults = # of total tickets

Cost per kid + cost per adult = total income

$$\boxed{\begin{array}{l} K + A = 172 \\ 4k + 8A = 1176 \end{array}}$$

$\uparrow$ equations $\uparrow$

Substitution Method:

$$K = -A + 172$$

$$4(-A + 172) + 8A = 1176$$
$$-4A + 688 + 8A = 1176$$
$$4A = 488$$
$$A = 122 \text{ tickets}$$

⑤

equations

1 dozen = 2.00   1 bag = 5.00

$$2e + 5g = 243$$
$$g = 5e$$

Substitution Method:
$$2e + 5(5e) = 243$$
$$2e + 25e = 243$$

$$g = 9 \cdot 5 = \boxed{45 \text{ bags of grain}}$$ $$27e = 243$$
$$e = 9$$

⑥   1 chore = 15 mins   1 dishes = -20 mins

$$c = 5d$$
$$15c - 20d = 165$$ equations

Substitution Method:
$$15(5d) - 20d = 165$$
$$75d - 20d = 165$$
$$55d = 165$$
$$d = 3$$

she has not done her chores
3 times

㉖   line 1 = (-14, 0) (0, 8) $\frac{8}{14} = \frac{4}{7}$ slope

$$y = \frac{4}{7}x + 8$$ shaded = above   so $y \geq$

line 2 = (0, 13) (13, 0) $\frac{-13}{13} = -1$ slope

$$y = -x + 13$$ shaded = below   so $y \leq$

looking at answer choices with these equations

Answer = B

solve for y

$$\frac{9y}{9} \leq \frac{6x}{9} + \frac{18}{9}$$
$$\boxed{y \leq \frac{2}{3}x + 2}$$

$$-4x - 4y \geq 8$$
$$+4x \qquad +4x$$
———————————
$$\frac{-4y}{-4} \geq \frac{4x}{-4} + \frac{8}{-4}$$
$$\boxed{y \leq -x - 2}$$