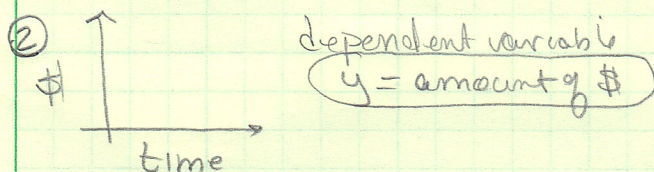


① $f(x) = 2.1x + 4$
 $g(x) = 2.1x + 4.25$
 $b = 4 \quad \uparrow \quad b = 4.25$

graph translates up .25



③ $f(x) = x^2 - 3 \quad x = \{1, 3, 5, 7\}$

$f(1) = 1^2 - 3 = -2$

$f(3) = 3^2 - 3 = 9 - 3 = 6$

$f(5) = 5^2 - 3 = 25 - 3 = 22$

$f(7) = 7^2 - 3 = 49 - 3 = 46$

Range $\{-2, 6, 22, 46\} \Rightarrow \text{J}$

④ # pay depends on # scoops

$x = \text{\# scoops}$

⑤ $c = 52h + 219 \quad ; \quad c = 388$

$388 = 52h + 219$

$\frac{169}{52} = \frac{52h}{52}$

$3.25 = h$

3.25 hours

⑥ $A = \frac{1}{2}bh \quad \text{b}$

⑦ $y = x(?) + 1$
 $(-10, -1) \rightarrow -1 = -10(?) + 1 - 1$
 $-2 = -10(?)$
 $\frac{-2}{-10} = \frac{-2}{-10}$

$? = \frac{1}{5}$

C

check: $0 = \frac{1}{5}(-5) + 1 \checkmark$
 $1 = \frac{1}{5}(5) + 1 \checkmark$
 $2 = \frac{1}{5}(10) + 1 \checkmark$

⑧ G

⑨ $p = 2r + .25c$

⑩ $m = \frac{25-9}{6-2} = \frac{16}{4} = 4$

Point-slope form: $y - 9 = 4(x - 2)$

$y = 4x - 8 + 9$

$y = 4x + 1$

C ←

⑪ from table pt $(0, 0)$ $b = 0$
 ∴ direct variation

$y = kx \quad \frac{y}{x} = k$

$k = \frac{3}{1} = 3$

$y = 3x \rightarrow \text{F}$

⑫ $f(x) = 4x - 1 \quad D: \{-3, 0, 4\}$

$f(-3) = 4(-3) - 1 = -12 - 1 = -13$

$f(0) = 4(0) - 1 = -1$

$f(4) = 4(4) - 1 = 15$

R $\{-13, -1, 15\} \quad \text{D}$

⑬ $b = -3$
 $m = \frac{\Delta y}{\Delta x} = \frac{2}{-2} = -1$

$y = -x - 3$

⑭ graph (left to right)

Starts at $x = 5$ ends at $x = 40$

∴ $5 \leq x \leq 40$

15) $y = 2x^2 - 1$ $x = \{-1, 0, 2\}$

$y = 2(-1)^2 - 1 = 2 - 1 = 1$

$y = 2(0)^2 - 1 = -1$ $y = \{-1, 1, 7\}$

$y = 2(2^2) - 1 = 8 - 1 = 7$ **M**

16) range $\{1, 1.5, 4\}$

17) $f(x) = 3x^2 + 2$ $\{ -3, 0, 4 \}$

$f(-3) = 3(-3^2) + 2 = 27 + 2 = 29$

$f(0) = 3(0) + 2 = 2$

$f(4) = 3(4^2) + 2 = 48 + 2 = 50$

Range $\{2, 29, 50\}$

18) G

19) line $\Rightarrow y < 2x - 1$

dash < $0 < 2(7) - 1$ true
below < $5 < 2(-4) - 1$ FALSE
 $-10 < 2(-3) - 1$ True
 $3 < 2(2) - 1$ True

G

20) A

21) $f(x) = 15x + 6$
 $100 = 15x + 6$
 $94 = 15x$
 $\frac{94}{15} = \frac{15x}{15}$
 $6.3 = x$

\therefore max hours 6

22) B

23) $-2(-3^3) + 5(-3) - 7$
 $= -2(-27) - 15 - 7$
 $54 - 15 - 7$
 $39 - 7 = 32$

24) $-2x^2 - 5x - 3 - (7 - 9x + 5x^2)$
 $-2x^2 - 5x - 3 - 7 + 9x - 5x^2$
 $-7x^2 + 4x - 10$
↑ coefficient = 4

25) $P \leq 500$
 $P = 2x + 2y$
 $2x + 2y \leq 500$
 $2(x + y) \leq 500$
 $x + y \leq 250$
 $x \leq 250 - y$ **J**

26) H

27) J

28) H

29) stage n \rightarrow # squares

n = 1	2
2	6
3	12
4	20

use substitution: plug n into equations

F. $5(1) - 3 = 2 \checkmark$
 $5(2) - 3 = 7 \text{ NO}$
G. $4(1) - 2 = 2 \checkmark$
 $4(2) - 2 = 6 \checkmark$
 $4(3) - 2 = 10 \text{ NO}$

H. $2(1)^2 = 2 = 2 \checkmark$
 $2(2^2) = 8 \text{ NO}$

J. $1^2 + 1 = 2 \checkmark$ $3^2 + 3 = 12 \checkmark$
 $2^2 + 2 = 6 \checkmark$ $4^2 + 4 = 20 \checkmark$ **J**

30 C

$$31) \begin{matrix} 2(3n-4m-7n) \\ 6n-8m-14n \\ \underline{-8n-8m} \end{matrix}$$

$$32) \begin{matrix} -5(2x^2-4x-12) \\ -10x^2+20x+60 \\ \uparrow \\ \underline{60} \end{matrix}$$

33) $1x + 2y \geq 30$

34) G

35) $5 + x^2 = 28$ (B)

36) sweater = 34 socks = 9
 $x \qquad \qquad \qquad y$
 $34x + 9y = \text{cost}$
 $34(3) + 9(4)$
#138

37) $r = 2(-2s + 4t)$
 $s = 9 \qquad = 2(-2(9) + 4(-2))$
 $t = 2 \qquad = 2(-18 - 8)$
 $= 2(-26)$
 $r = -52$

38) G

39) (F) linear?
 $\frac{y_2 - y_1}{x_2 - x_1}$ constant

$$\frac{9+3}{4+2} = \frac{12}{6} = 2 \qquad \frac{13-9}{6-4} = \frac{4}{2} = 2$$

$$\frac{17-13}{8-6} = \frac{4}{2} = 2 \qquad \text{Yes constant}$$

40) $3x - 2 = 10$

41) $m = \frac{1}{3}$

42) N
 L
 N
 N
 L
 L
 N

43) plug ordered pairs into $y = mx + b$

$y = -x + 7 \Rightarrow$ (A)

44) $m = \frac{10-8}{1-2} = \frac{2}{-1} = -2$

$m = -2$

45) $y = -6x - 3$

46) $6x + 9y = 18$
 $(\frac{1}{9})9y = (-6x + 18)(\frac{1}{9})$

$$y = -\frac{6}{9}x + \frac{18}{9}$$

$$= -\frac{2}{3}x + 2$$

$m = -\frac{2}{3}$

47) G

48) $m = \frac{4}{3}$
 \Rightarrow B

- 49 a) $y = 3x - 5$ $m = 3$
- b) $x = 9y + 45$
 $\therefore y = \frac{1}{9}x + 5$ $m = \frac{1}{9}$
- c) $9y = 3x - 5$
 $y = \frac{1}{3}x - \frac{5}{9}$ $m = \frac{1}{3}$
- d) $9y + 45x = 5$
 $y = -5x + \frac{5}{9}$
 $m = -5$

Abs val of m
 \Rightarrow (D)

- 50 line: $y = 3x + 4$ $\downarrow 2$
transform $y = -3x + 2$
(C)

- 51 plug in (x, y) to ~~see~~ which answer is a solution to both points
OR! $m = \frac{9+11}{3+2} = \frac{20}{5} = 4$
delete C & D
Check A & B \rightarrow (A)

- 52 $m = \frac{-5-3}{4-0} = \frac{-8}{4} = -2$
 $(0, -3) \leftarrow$ intercept
 $\therefore y = -2x + 3$

- 53 $y = 3x + 2$

- 54 point slope form
 $y - 2 = -\frac{2}{3}(x - 6) + 2$
 $y = -\frac{2}{3}x - 2$

- 55 $f(x) = 2(x - 5)$
 $= 2x - 10$
 $b = 0, -10$

- 56 $6x + 4y = 12$
 $y = 0$ $x = ?$
 $6x = 12$
 $x = 2 \Rightarrow (2, 0)$

- 57 $y = 5x + 4$
slope = 4 \$/movie
increase slope \Rightarrow increase price/video (H)

- 58 $y = kx$ $246.4 = k(44)$
 $\frac{246.4}{44} = k$
 $5.6 = k$
 $\therefore y = 5.6x$

- 59 NO why? ratio $\frac{y}{x}$ is not constant

- b) $\frac{y}{x} = \frac{350}{1} = \frac{700}{2} = \frac{1050}{3} = \frac{1400}{4}$
D.V. $\therefore y = 350x$

- 60 $b = ka$
 $1150 = 20k$
 $k = 57.5$
 $b = 57.5(72.5)$
 $= 4168.75$
bushels

(61) sales ≥ 150
 $95 + 12 + c \geq 150$
 $107 + c \geq 150 \rightarrow \text{D}$

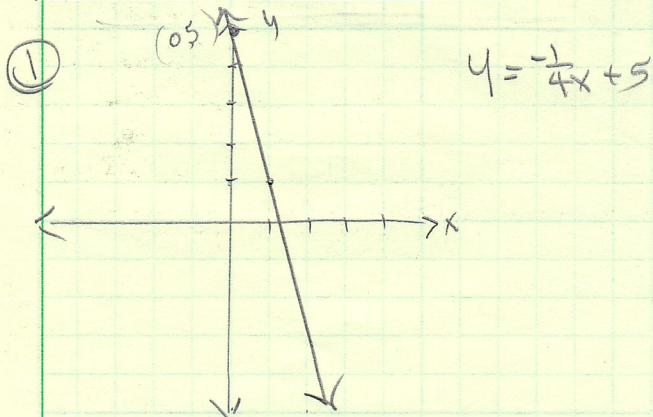
(62) pizza cost ≤ 60
 $7.50p \leq 60$
 $p \leq 8$
 max 8 pizzas

(63) $7x - 2(-6) = 33$
 $7x + 12 = 33$
 $7x = 21$
 $x = 3$

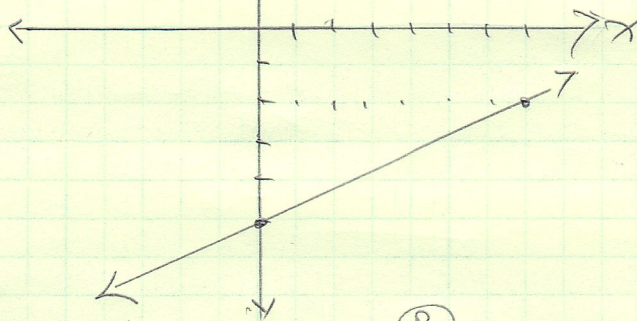
(64) $x - 2 < -\frac{1}{8} + 2$
 $+2$
 Additive inverse

(65) $5(4) - 8y = -20$
 $20 - 8y = -20$
 $-8y = -40$
 $y = 5$

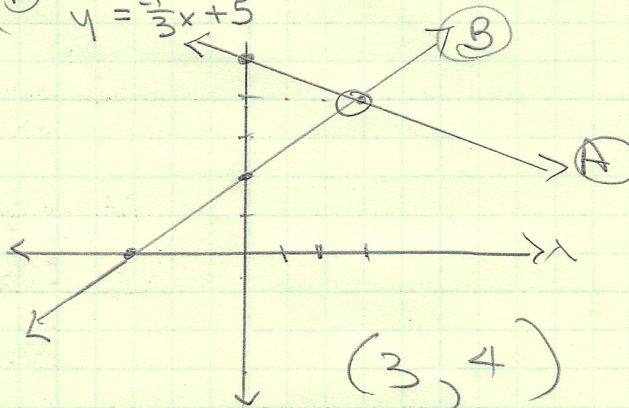
Non-Calculator Section



(2) $3x - 7y = 35$ $-7y = -3x + 35$
 $y = \frac{3}{7}x - 5$



(3) $x + 3y = 15$ $2x - 3y = -6$
 (A) $3y = -x + 15$ $(0, 2), (3, 0)$
 $y = -\frac{1}{3}x + 5$



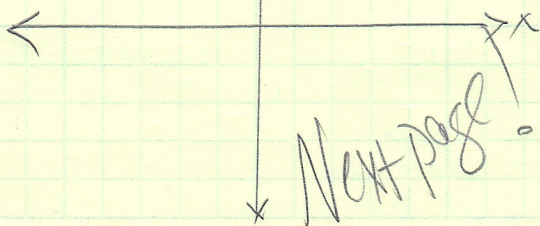
(4) $f(x) = \frac{1}{4}x + 5$ $g(x) = 3x - 3$

(1) reflection - slope to + slope

(2) rotation - slope gets steeper
 $|m| = \frac{1}{4}$ to $|m| = 3$

(3) translation - slide down
8 units $b = 5 \rightarrow b = -3$

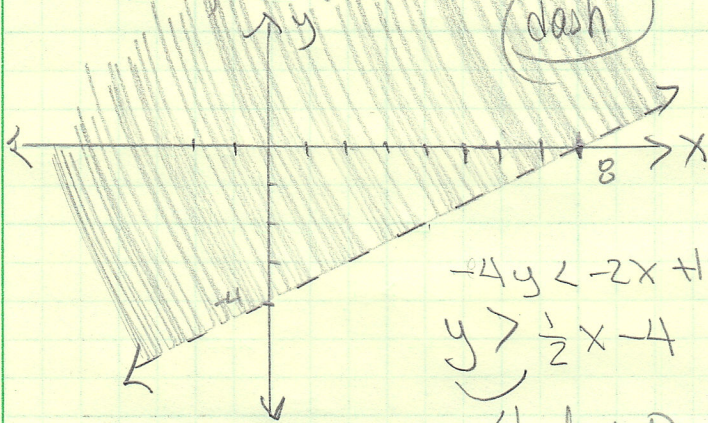
(5) $2x - 4y < 16$ $(0, -4)$
 $(8, 0)$



Next page!

5 $2x - 4y < 16$

$(0, -4)$ $(8, 0)$



$-4y < -2x + 16$

$y > \frac{1}{2}x - 4$

Shade up

6

$y \geq -\frac{2}{3}x - 3$

Shade up
Solid

