

16A

1) $N + D = 8$

$.05N + .10D = .65$

$$\begin{array}{r} 2) (N + D = 8)(-5) = -5N - 5D = -40 \\ (.05N + .10D = .65)(100) = 5N + 10D = 65 \\ \hline 5D = 25 \\ D = 5 \end{array}$$

3) If $D = 5$ and $N + D = 8$, then nickels = 3.

4) $P + D = 25$

$.01P + .10D = .88$

$$\begin{array}{r} 5) (P + D = 25)(-10) = -10P - 10D = -250 \\ (.01P + .10D = .88)(100) = P + 10D = 88 \\ \hline -9P = -162 \\ P = 18 \end{array}$$

6) If $P = 18$ and $P + D = 25$, then dimes = 7

7) $P + N = 26$

$.01P + .05N = .86$

$$\begin{array}{r} 8) (P + N = 26)(-1) = -P - N = -26 \\ (.01P + .05N = .86)(100) = P + 5N = 86 \\ \hline 4N = 60 \\ N = 15 \end{array}$$

9) If $N = 15$ and $P + N = 26$, then $P = 11$.

10) $Q + D = 13$

$.25Q + .10D = 1.75$

$$\begin{array}{r} 11) (Q + D = 13)(-10) = -10Q - 10D = -130 \\ (.25Q + .10D = 1.75)(100) = 25Q + 10D = 175 \\ \hline 15Q = 45 \\ Q = 3 \end{array}$$

12) If $Q = 3$ and $Q + D = 13$, then $D = 10$

16B

1) $N + D = 20$

$.05N + .10D = 1.75$

$$\begin{array}{r} 2) (N + D = 20)(-10) = -10N - 10D = -200 \\ (.05N + .10D = 1.75)(100) = 5N + 10D = 175 \\ \hline -5N = -25 \\ N = 5 \end{array}$$

3) If $N = 5$ and $N + D = 20$, then dimes = 15

4) $P + D = 39$

$.01P + .10D = 1.83$

$$\begin{array}{r} 5) (P + D = 39)(-10) = -10P - 10D = -390 \\ (.01P + .10D = 1.83)(100) = P + 10D = 183 \\ \hline -9P = -207 \\ P = 23 \end{array}$$

6) If $P = 23$ and $P + D = 39$, then dimes = 16

7) $N + D = 19$

$.05N + .10D = 1.25$

$$\begin{array}{r} 8) (N + D = 19)(-10) = -10N - 10D = -190 \\ (.05N + .10D = 1.25)(100) = 5N + 10D = 125 \\ \hline -5N = -65 \\ N = 13 \end{array}$$

9) If $N = 13$ and $N + D = 19$, then $D = 6$.

10) $Q + N = 40$

$.25Q + .05N = 5.00$

$$\begin{array}{r} 11) (Q + N = 40)(-5) = -5Q - 5N = -200 \\ (.25Q + .05N = 5.00)(100) = 25Q + 5N = 500 \\ \hline 20Q = 300 \\ Q = 15 \end{array}$$

12) If $Q = 15$ and $Q + N = 40$, then $N = 25$

16C

1) $.05N + .10D = .85$, $N + D = 12$

$$\begin{array}{r} 2) 5N + 10D = 85 \\ -5N - 5D = -60 \\ \hline 5D = 25, \quad D = 5 \end{array}$$

3) $N + (5) = 12$, $N = 7$

$.05(7) + .10(5) = .85$

$.35 + .50 = .85 \checkmark$

4) $.01P + .05N = .38$, $P + N = 10$

5) $P + 5N = 38$

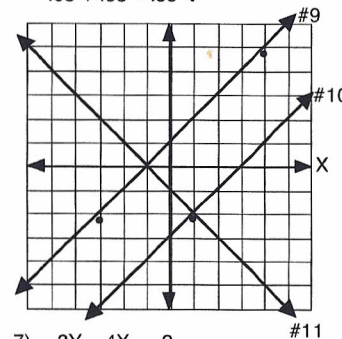
$-5P - 5N = -50$

$\hline -4P = -12, \quad P = 3$

6) $(3) + N = 10$, $N = 7$

$.01(3) + .05(7) = .38$

$.03 + .35 = .38 \checkmark$



$$\begin{array}{r} 7) 3Y - 4X = 2 \\ -2Y + 4X = 12 \\ \hline Y = 14 \end{array}$$

8) $(14) - 2X = -6$, $-2X = -20$, $X = 10$

$$9) \frac{-2 - 5}{-3 - 4} = \frac{-7}{-7} = 1 = m$$

$$(-2) = 1(-3) + b, \quad b = 1, \text{ so } Y = X + 1 \text{ or } X - Y = -1$$

$$10) (-2) = 1(1) + b, \quad b = -3, \text{ so } Y = X - 3 \text{ or } X - Y = 3$$

$$11) (-2) = -1(1) + b, \quad b = -1, \text{ so } Y = -X - 1 \text{ or } X + Y = -1$$

12) $24'' = 2'$, $Y = 2X + 2$

13) $Y = 2(3) + 2$, $Y = 8$ ft.

14) $Y = 3(9) + 2$, $Y = 29$ ft.

15) $8 \times (-5) - 3 - 9 = -40 - 3 - 9 = -52$

16) 4th

17) no

18) yes

19) 169

20) 8

16D

1) $.05N + .10D = .60$, $N + D = 9$

$$\begin{array}{r} 2) 5N + 10D = 60 \\ -5N - 5D = -45 \\ \hline 5D = 15, \quad D = 3 \end{array}$$

3) $N + (3) = 9$, $N = 6$

$.05(6) + .10(3) = .60$

$.30 + .30 = .60 \checkmark$

4) $.01P + .05N = .26$, $P + N = 6$

5) $P + 5N = 26$

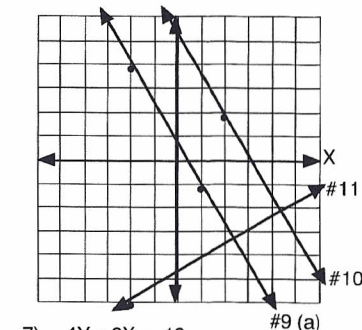
$-5P - 5N = -30$

$\hline -4P = -4, \quad P = 1$

6) $(1) + N = 6$, $N = 5$

$.01(1) + .05(5) = .26$

$.01 + .25 = .26 \checkmark$



$$\begin{array}{r} 7) 4Y + 3X = -19 \\ Y - 3X = -1 \\ \hline 5Y = -20, \quad Y = -4 \end{array}$$

8) $(-4) - 3X = -1$, $-3X = 3$, $X = -1$

$$9) -\frac{5}{3} = m \text{ (from graph)}$$

$$(-1) = -5/3(1) + b, \quad b = 2/3, \text{ so } Y = -5/3X + 2/3 \text{ or } 5X + 3Y = 2$$

$$10) (2) = -5/3(2) + b, \quad b = 16/3, \text{ so } Y = -5/3X + 16/3 \text{ or } 5X + 3Y = 16$$

$$11) (-6) = 3/5(-2) + b, \quad b = -24/5, \text{ so } Y = 3/5X - 24/5 \text{ or } 3X - 5Y = 24$$

12) $Y = 2X + 4$

13) $Y = X + 8$

14) $Y = 2X + 4$

$$\hline -Y = -X - 8 \\ 0 = X - 4, \quad X = 4$$

15) $Y = 4 + 8$, $Y = 12$

16) $Y = 2(12) + 4 = 28$, $Y = 12 + 8 = 20$

17) $-(-4)^2 + (-3)^2 = -16 + 9 = -7$

18) 3rd

19) no

20) yes

16E

1) $.05N + .10D = 1.10, \quad N + D = 14$

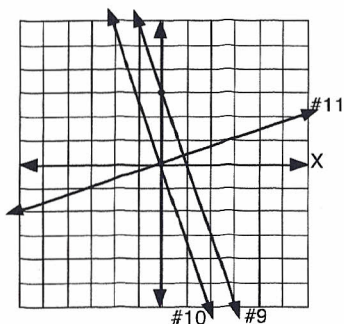
2)
$$\begin{array}{r} 5N + 10D = 110 \\ -5N - 5D = -70 \\ \hline 5D = 40, \quad D = 8 \end{array}$$

3) $N + (8) = 14, \quad N = 6$
 $.05(6) + .10(8) = 1.10$
 $.30 + .80 = 1.10 \quad \checkmark$

4) $.01P + .05N = .20, \quad P + N = 8$

5)
$$\begin{array}{r} P + 5N = 20 \\ -5P - 5N = -40 \\ \hline -4P = -20, \quad P = 5 \end{array}$$

6) $(5) + N = 8, \quad N = 3$
 $.01(5) + .05(3) = .20$
 $.05 + .15 = .20 \quad \checkmark$



7)
$$\begin{array}{r} (-4X - 4) = 2X + 2 \\ -6X = 6, \quad X = -1 \end{array}$$

8) $Y = 2(-1) + 2, \quad Y = 0$

9) on the graph

10) $(0) = -3(0) + b, \quad b = 0$
 $Y = -3X \text{ or } 3X + Y = 0$

11) $Y = 1/3 X \text{ or } X - 3Y = 0$

12) $T = 5M + 100$

13) $T = 5(15) + 100 = 175^\circ\text{C}$

14) $T = 10M + 100, \quad T = 10(15) + 100 = 250^\circ\text{C}$

15) $-12^2 + (-5)^2 = -144 + 25 = -119$

16) 2nd

17) yes

18) no

19) 625

20) 15

17A

1) $N, N + 1, N + 2$

2) $N + (N + 1) + (N + 2) + 4 = 4(N + 1)$

3)
$$\begin{array}{r} 3N + 7 = 4N + 4 \\ 7 - 4 = 4N - 3N, \quad 3 = N \\ 3, 4, 5 \end{array}$$

4)
$$\begin{array}{r} 3 + (4) + (5) + 4 = 4(4) \\ 16 = 16 \quad \checkmark \end{array}$$

5) $N, N + 2, N + 4$

6) $N + (N + 2) = (N + 4) + 4$

7)
$$\begin{array}{r} 2N + 2 = N + 8, \\ N = 6, \quad 6, 8, 10 \end{array}$$

8)
$$\begin{array}{r} (6) + (8) = (10) + (4) \\ 14 = 14 \quad \checkmark \end{array}$$

9) $N, N + 1, N + 2$

10) $5(N + 1) = 3[N + (N + 2)] + 2$

11)
$$\begin{array}{r} 5N + 5 = 3[2N + 2] + 2 \\ 5N + 5 = 6N + 6 + 2, \\ 5 - 8 = N, \quad N = -3 \\ -3, -2, -1 \end{array}$$

12)
$$\begin{array}{r} 5(-2) = 3[(-3) + (-1)] + 2 \\ -10 = -10 \quad \checkmark \end{array}$$

13) $N, N + 2, N + 4$

14) $N + (N + 4) = 3(N + 2) + 3$

15)
$$\begin{array}{r} 2N + 4 = 3N + 6 + 3 \\ 4 - 9 = N, \quad N = -5 \\ -5, -3, -1 \end{array}$$

16)
$$\begin{array}{r} (-5) + (-1) = 3(-3) + 3 \\ -6 = -6 \quad \checkmark \end{array}$$

17B

1) $N, N + 2, N + 4$

2) $3(N + 4) = 2(N + N + 2) + 2$

3)
$$\begin{array}{r} 3N + 12 = 2(2N + 2) + 2 \\ 3N + 12 = 4N + 4 + 2 \\ 12 - 6 = 4N - 3N, \quad N = 6 \\ 6, 8, 10 \end{array}$$

4)
$$\begin{array}{r} 3(10) = 2(6 + 8) + 2 \\ 30 = 30 \quad \checkmark \end{array}$$

5) $N, N + 1, N + 2$

6) $N + (N + 2) = 20(N + 1)$

7)
$$\begin{array}{r} 2N + 2 = 20N + 20 \\ -18 = 18N, \quad N = -1 \\ -1, 0, 1 \end{array}$$

8)
$$\begin{array}{r} (-1) + (1) = 20(0) \\ 0 = 0 \quad \checkmark \end{array}$$

9) $N, N + 1, N + 2$

10) $5(N) + 2(N + 1) = 6(N + 2)$

11)
$$\begin{array}{r} 5N + 2N + 2 = 6N + 12 \\ 7N + 2 = 6N + 12, \quad N = 10 \\ 10, 11, 12 \end{array}$$

12)
$$\begin{array}{r} 5(10) + 2(11) = 6(12) \\ 72 = 72 \quad \checkmark \end{array}$$

13) $N, N + 2, N + 4$

14) $N + (N + 4) = 3(N + 2) + 19$

15)
$$\begin{array}{r} 2N + 4 = 3N + 6 + 19 \\ 4 - 25 = N, \quad N = -21 \\ -21, -19, -17 \end{array}$$

16)
$$\begin{array}{r} (-21) + (-17) = 3(-19) + 19 \\ -38 = -38 \quad \checkmark \end{array}$$

17C

1) $N, N + 2, N + 4$

2) $5(N + 4) - 4N = 4(N + 2)$

3)
$$\begin{array}{r} 5N + 20 - 4N = 4N + 8 \\ N + 20 = 4N + 8 \\ 12 = 3N, \quad N = 4 \\ 4, 6, 8 \end{array}$$

4) $N, N + 1, N + 2$

5) $6(N + 1) + 4N = 9(N + 2) - 4$

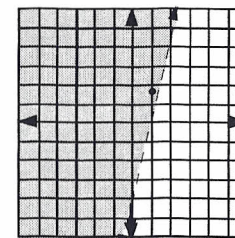
6)
$$\begin{array}{r} 6N + 6 + 4N = 9N + 18 - 4 \\ 10N + 6 = 9N + 14, \quad N = 8 \\ 8, 9, 10 \end{array}$$

7)
$$\begin{array}{r} .05N + .10D = .80, \quad N + D = 11 \\ 5N + 10D = 80 \\ -5N - 5D = -55 \\ \hline 5D = 25, \quad D = 5 \end{array}$$

$$\begin{array}{r} N + (5) = 11 \\ N = 6 \end{array}$$

$$\begin{array}{r} .05(6) + .10(5) = .80 \\ .30 + .50 = .80 \quad \checkmark \end{array}$$

8) $Y > 4X - 4$



9) see graph

10) yes

$$\begin{array}{r} 4Y + X = 11 \\ -4Y + 6X = -18 \\ \hline 7X = -7 \\ X = -1 \end{array}$$

$$\begin{array}{r} 4Y + (-1) = 11 \\ 4Y = 12 \\ Y = 3 \end{array}$$

12) $4Y + X = 11 \Rightarrow Y = -1/4 X + 11/4$
 $(1) = -1/4(0) + b, \quad b = 1$
 $Y = -1/4 X + 1 \text{ or } X + 4Y = 4$

13) 21

14) $4(N + 2) = 23 + N$

15) $4N + 8 = 23 + N, \quad 3N = 15$
 $N = 5$

16) $[2(5 - 3) + 1] \div 5 = (4 + 1) \div 5 = 1$

17) $1/2 + 2/3 = 3/6 + 4/6 = 7/6 = 1 \frac{1}{6}$

18) $.75 \times 250 = 187.5$

19) $180 - 16A = 1000, \quad -820 = 16A$
 $A = -51.25$

20) $2 \times 2 \times 2 \times 2 \times 2 \times 3$