12E

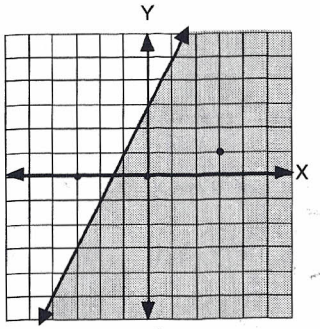
1) on the graph

2) solid

3) (0, 0) $(0) \le 2(0) + 3$, $0 \le 3$ true
(-3, 0) $(0) \le 2(-3) + 3$, $0 \le -3$ false

4) on the graph

5) yes



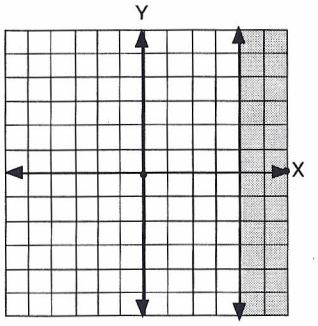
6) on the graph

7) solid

8) (0, 0) $(0) \ge 4$ false
(6, 0) $(6) \ge 4$ true

9) on the graph

10) multiplying or dividing by a negative number



11) WF x 8 = 1, WF = 1/8

12) WF x 4 = 1, WF = 1/4 = .25 = 25%

13) $\frac{1}{.95} = \frac{4 \text{ qt.}}{X}$

(1)(X) = (.95)(4), X = 3.8 liters

14) $\frac{1}{.95} = \frac{X}{1}$

(1)(1) = (.95)(X), X = 1 1/19 liter or 1.05 liter (rounded)

15) Y = 2X + 32, m = 2

16) m = -1/2

17) (-4) = 3(-3) + b, b = 5
Y = 3X + 5 or 3X - Y = -5

18) 12 ÷ 17 = .705... = .71 (rounded) = 71%

19) .17 x 425 = 72.25

20) quadrant 4

13A

1) on the graph

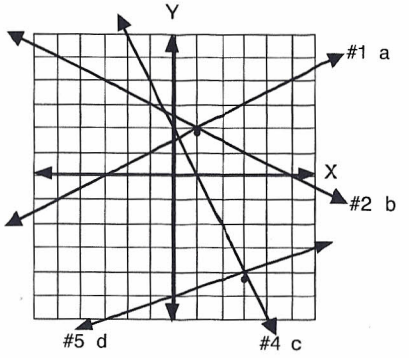
2) on the graph

3) (1, 2)

4) on the graph

5) on the graph

6) (3, -4)



7) on the graph

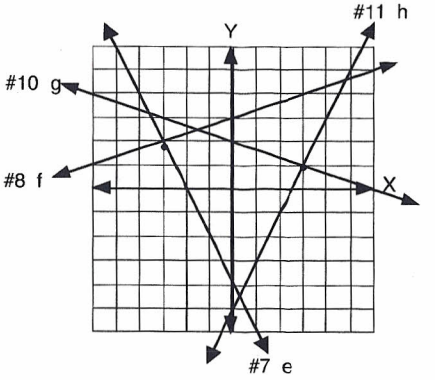
8) on the graph

9) (-3, 2)

10) on the graph

11) on the graph

12) (3, 1)



13) on the graph

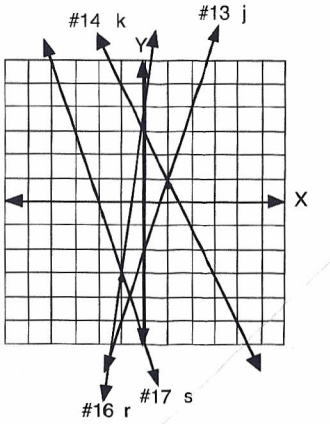
14) on the graph

15) (1, 1)

16) on the graph

17) on the graph

18) (-1, -3)



13B

1) on the graph

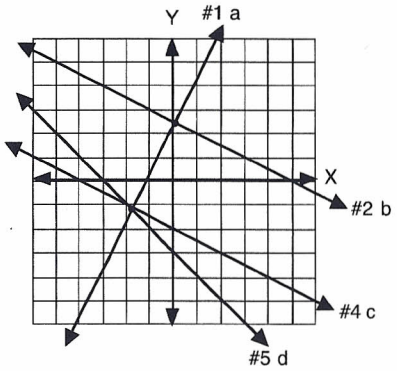
2) on the graph

3) (0, 5/2)

4) on the graph

5) on the graph

6) (-2, -1)



7) on the graph (Y = X - 2)

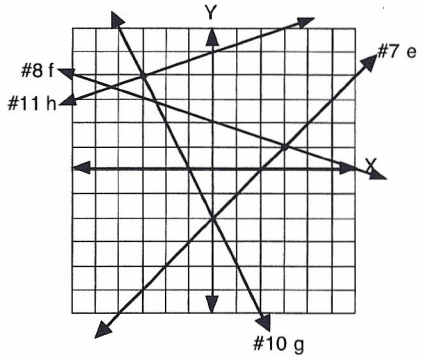
8) on the graph (Y = - 1/3 X + 2)

9) (3, 1)

10) on the graph (Y = -2X - 2)

11) on the graph

12) (-3, 4)



13) on the graph (Y = -1/4 X + 3)

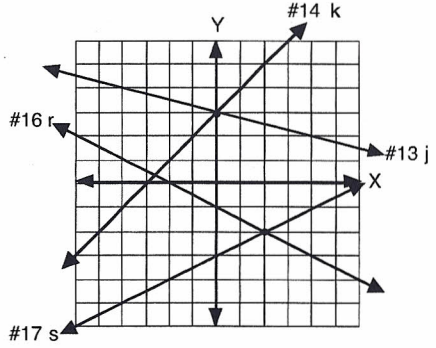
14) on the graph

15) (0, 3)

16) on the graph (Y = -1/2 X - 1)

17) on the graph

18) (2, -2)



13C

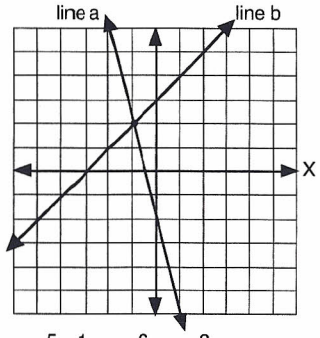
1) on the graph

2) on the graph

3) (-1, 2)

4) (-3) = -4(1) + b, b = 1

5) Y = -4X + 1, 4X + Y = 1



6) $\frac{-5 - 1}{-5 - 5} = \frac{-6}{-10} = \frac{3}{5} = m$

7) (1) = 3/5(5) + b, 1 = 3 + b, b = -2

8) Y = 3/5 X - 2, 5Y = 3X - 10 $\Rightarrow$ -3X + 5Y = -10

9) m = 2/3
(4) = 2/3(4) + b
4 - 8/3 = b, 4/3 = b

10) Y = 2/3 X + 4/3, 3Y = 2X + 4 $\Rightarrow$ -2X + 3Y = 4

11) 8X - 3X + 7 = 4X + 8
5X - 4X = 8 - 7, X = 1

12) 4(Q + 3) = 4(5)
Q + 3 = 5, Q = 2

13) $5^2 \div 5 + 3(X + 7) = 2X + 27$
$25 \div 5 + 3X + 21 = 2X + 27$
5 + X = 27 - 21, X = 1

14) $7^2 \times 2 - 4(Y + 11) = 3Y - 2$
49 x 2 - 4Y - 44 = 3Y - 2
54 - 4Y = 3Y - 2, 56 = 7Y, 8 = Y

15) $\cancel{(30)}^{3} \frac{6}{\cancel{10}} - \cancel{(30)}^{10} \frac{2}{\cancel{3}} X = \cancel{(30)}^{30} \frac{11}{\cancel{1}}$

18 - 20X = 330, $X = -15\frac{6}{10} = -15\frac{3}{5}$

16) |-8 - 4 |- 6Y = 32 ÷ |-8 |
12 - 6Y = 4, 8 = 6Y, Y = 1 1/3

17) 7:45 to 2:15 is 6 1/2 hours
338 ÷ 6.5 = 52 miles/hour

18) 338 ÷ 13 = 26 mpg

19) 32, 64, 128 (double each number)

20) 8, 13 (add the previous two numbers)

13D

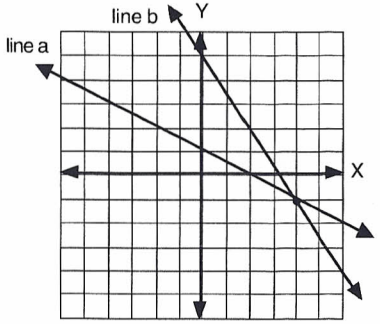
1) on the graph

2) on the graph

3) (4, -1)

4) (1) = -3/2(-1) + b, b = -1/2

5) Y = -3/2 X - 1/2, 3X + 2Y = -1



6) $\frac{-4 - 2}{1 - (-4)} = \frac{-6}{5}$ m = -6/5 or -1 1/5

7) (2) = -6/5(-4) + b, b = -2 4/5

8) Y = -6/5 X - 14/5, 6X + 5Y = -14

9) m = -4/3
(-3) = -4/3(2) + b
-1/3 = b

10) Y = -4/3X - 1/3, 4X + 3Y = -1

11) 16X - 8X = 56, X = 7

12) 3(6A - 5) = 3(8), 6A - 5 = 8, A = 13/6 = 2 1/6

13) $(1 - 7)^2 - 8N + 11 = -3$
36 - 8N = - 14
50 = 8N, N = 50/8 = 6 1/4

14) .78 + .4 = 2X
78 + 40 = 200X
118 = 200X, X = 118/200 = 59/100 = .59

15) .3 + .5A = 2A - 1.8
3 + 5A = 20A - 18
21 = 15A, 21/15 = A = 1 6/15 = 1 2/5

16) $(4 - 8)^2 \times 6 - 3 \times 5^2 = 7Y$
16 x 6 - 3 x 25 = 7Y
96 - 75 = 7Y
21 = 7Y, Y = 3

17) 6:50 AM to 2:05 PM is 7.25 hours
348 ÷ 7.25 = 48 miles/hour

18) 348 ÷ 14.5 = 24 mpg

19) 36, 49, 64, 81 (count by one and square)

20) 1/162, 1/486, 1/1458 (÷ previous # by 3)

13E

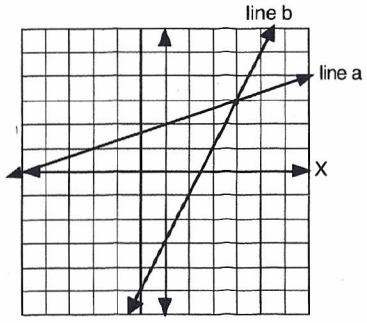
1) on the graph

2) on the graph

3) (3, 3)

4) $2 = 5 + b, \quad b = -3$

5) $Y = X - 3, \quad X - Y = 3$



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

7) $4 = 1/2(1) + b, \quad b = 3\ 1/2$

8) $Y = 1/2X + 7/2, \quad X - 2Y = -7$

9) $m = 5/4$
$-2 = 5/4(-2) + b$
$-2 = -5/2 + b, \quad 1/2 = b$

10) $Y = 5/4\ X + 1/2, \quad -5X + 4Y = 2$ or $5X - 4Y = -2$

11) $3Q + 7 + 2Q - 5 - 4Q = -Q + 1 + 4 + Q$
$Q + 2 = 5, \quad Q = 3$

12) $T + 4 + 3T - 6 - 2T = 2T + 5 - 4T - 1 + 2T$
$2T - 2 = 4, \quad 2T = 6, \quad T = 3$

13) $-2.8P + .06P = 5.72$
$-280P + 6P = 572$
$-274P = 572, \quad P = -572/274$ Reduced: $-2\ 12/137$

14) $32Y - 8Y = -36$
$24Y = -36$
$Y = -36/24 = -3/2$

15) $.03\ 3/4\ X - .75 = 0$
$3(3/4)X - 75 = 0$
$9/4X = 75$
$X = 75(4/9) = 300/9 = 100/3 = 33.33$

16) $4\ 2/3 + 3\ 1/3X = -3$
$14/3 + 10/3X = -3, \quad 14 + 10X = -9$
$10X = -23, \quad X = -2\ 3/10$

17) 8:20 to 2:40 is 6 1/3 hours
$335 \div 19/3 = 335 \times 3/19 =$
52.9 miles/hour (rounded)

18) $335 \div 13.4 = 25$ mpg

19) XD, XE, XF (X times next letter in alphabet)

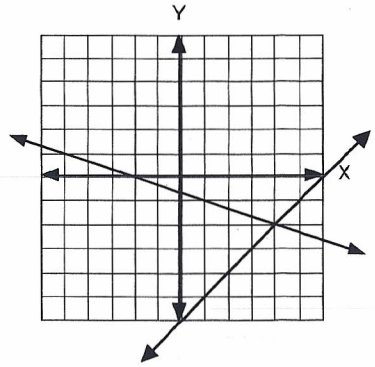
20) 4.75, 5, 5.25, 5.5, 5.75 (add .25 each time)

14A

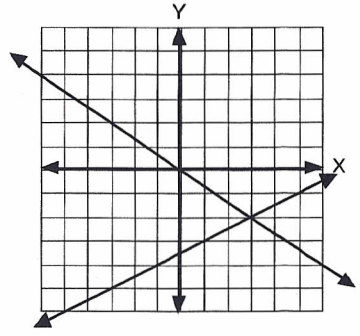
1) (4, -2)

2) $(Y + 6) + 3Y = -2,$
$4Y = -8, \quad Y = -2$

3) $X = -2 + 6 = 4$
$X = 4$



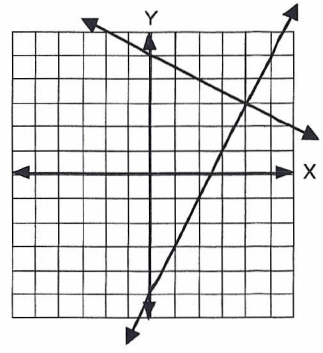
4) (3, -2)



5) $2(7 + 2Y) + 3Y = 0$
$14 + 4Y + 3Y = 0$
$14 + 7Y = 0$
$14 = -7Y$
$Y = -2$

6) $2X + 3(-2) = 0$
$2X - 6 = 0$
$2X = 6$
$X = 3$

7) (4, 3)



8) $X + 2(2X - 5) = 10$
$X + 4X - 10 = 10$
$5X = 20$
$X = 4$

9) $Y = 2(4) - 5$
$Y = 8 - 5$
$Y = 3$

10) $2X - 3(X + 3) = -4 \quad X = -5 \qquad (-5, -2)$
$2X - 3X - 9 = -4 \quad Y = -5 + 3$
$-X = 5 \qquad Y = -2$