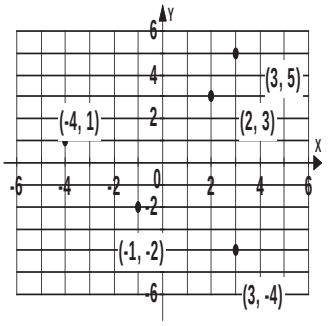
Additional Exercises Answers

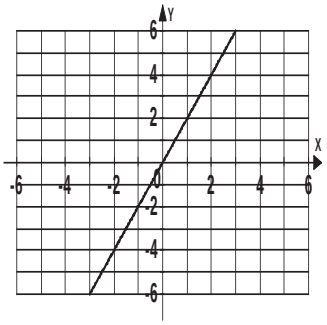
4.1 Form I



1. I 2. II 3. III 4. I 5. IV

6. yes 7. yes 8. no 9. (6, 42) 10. (2, 17) 11. (–1, –1)

12.



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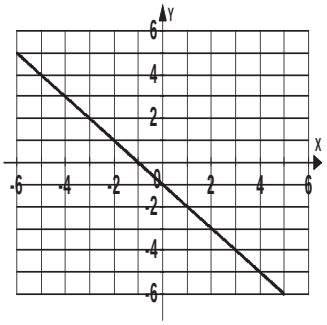

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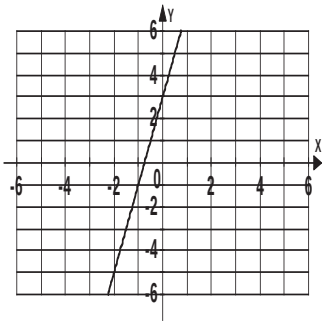

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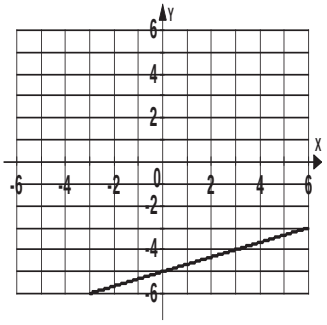

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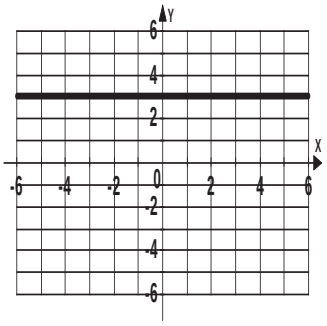

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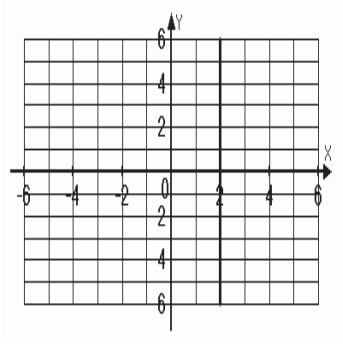
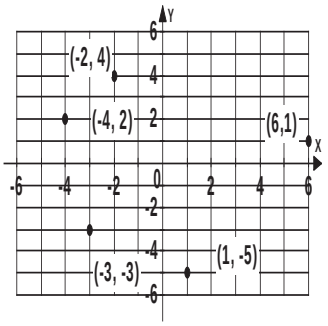


18. $193.50 19. 96 ft. 20. 100 ounces

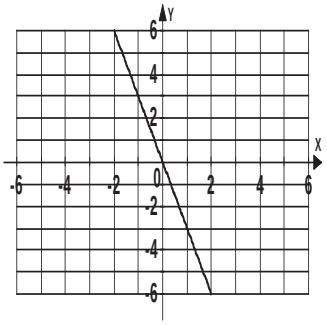
4.1 Form II



1. IV 2. II 3. III 4. I 5. II

6. no 7. no 8. yes 9. (5, –41) 10. (4, –35) 11. (–1, 7)

12.



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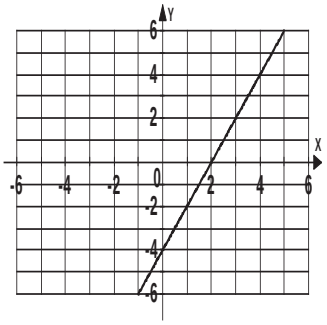

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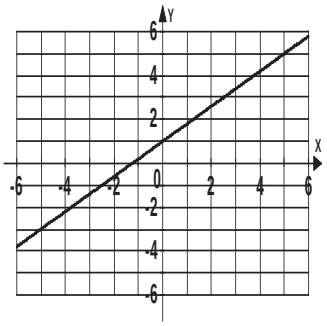

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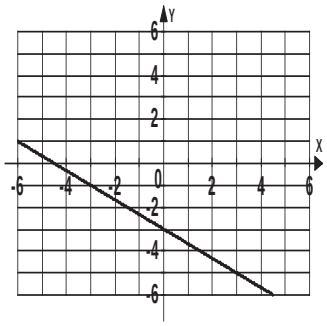

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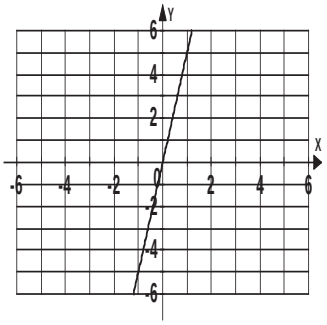

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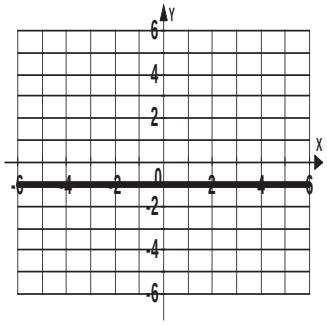
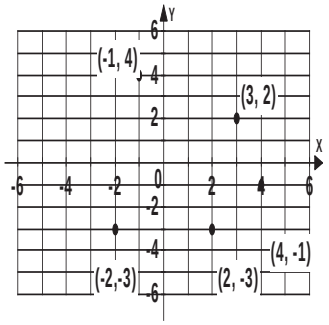


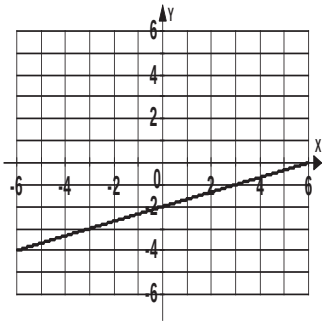
18. $46 19. $23.20 20. 3993 ft.

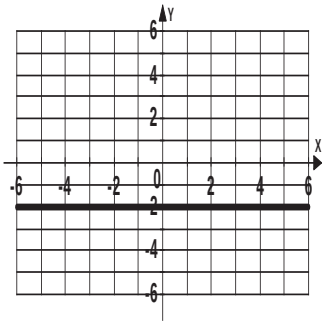
4.1 Form III

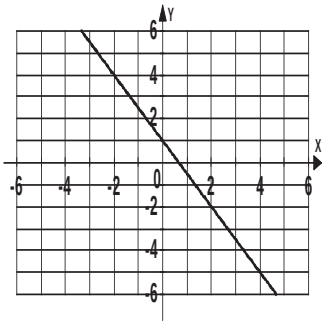


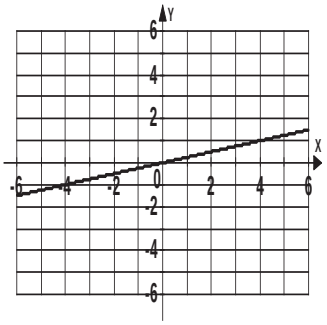
1. IV 2. III 3. I 4. IV 5. II

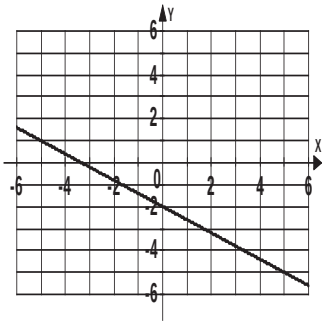
6. yes 7. no 8. no 9. $\left(-4, -\frac{8}{3}\right)$ 10. (5, 1) 11. $\left(\frac{1}{2}, -4\right)$

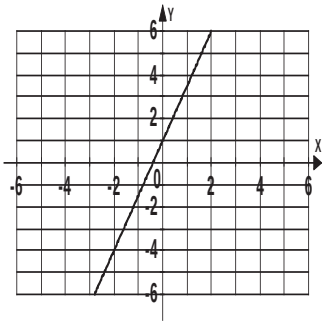
12. 

13. 

14. 

15. 

16. 

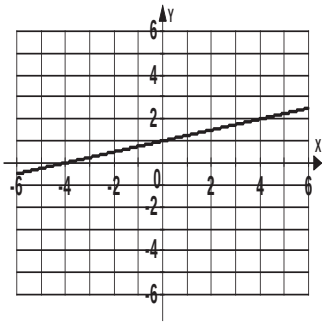
17. 

18. $203.75 19. $75 20. 134 feet

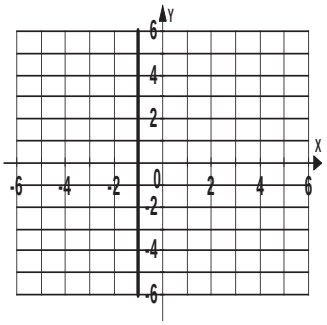
4.2 Form I

1. x-int (6, 0) ; y-int (0, 6) 2. x-int (4, 0) ; y-int (0, 2) 3. x-int (4, 0) ; y-int (0, –3)
4. x-int none ; y- int (0, 5) 5. x-int (3, 0) ; y-int (0, 3) 6. x-int (–3, 0) ; y-int (0, –6)
7. x-int (5, 0) ; y-int (0, –2) 8. x-int (2, 0) ; y-int (0, –2)

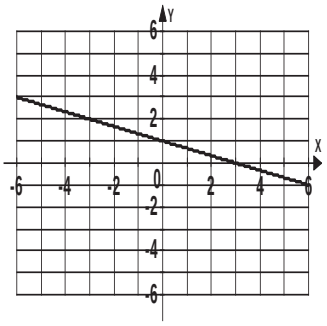
9a. x-int (–4, 0) ; y-int (0, 1)

b. 

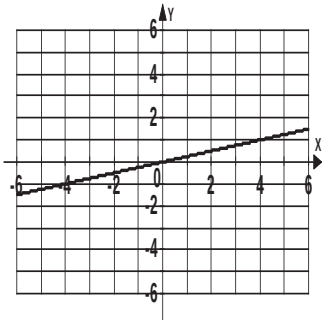
10a. x- int (–1, 0) ; y- int none

b. 

11a. x-int (3, 0) ; y- int (0,1)

b. 

12a. x-int (0, 0) ; y-int (0,0)

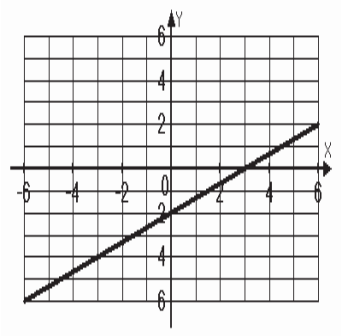
b. 

13. $y = -2$ 14. $x = -3$

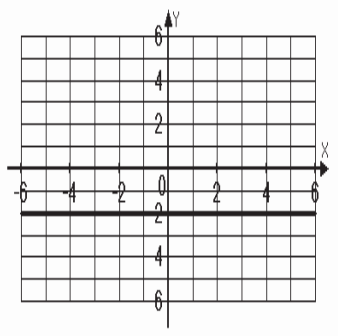
4.2 Form II

1. x-int (1, 0) ; y-int (0, 2) 2. x-int (2, 0) ; y-int (0, –6) 3. x-int (3, 0) ; y-int none
4. x-int (0, 0) ; y- int (0, 0) 5. x-int (6, 0) ; y-int (0, 6) 6. x-int (4, 0) ; y-int (0, –8)
7. x-int (–10, 0) ; y-int (0, –6) 8. x-int $\left(\frac{9}{2},\ 0\right)$; y-int (0, –6)

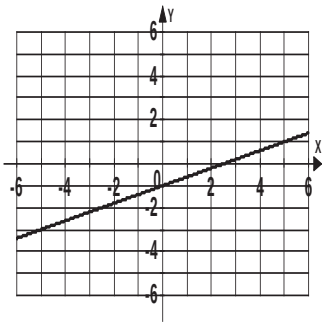
9a. x-int (3, 0) ; y-int (0, –2)

b. 

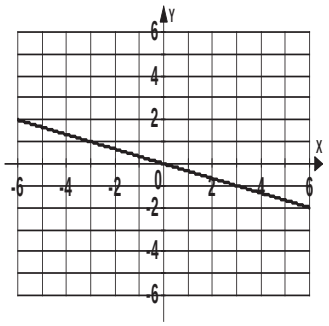
10a. x- int none ; y- int (0, –2)

b. 

11a. x-int $\left(\frac{5}{2},\ 0\right)$; y- int (0,–1)

b. 

12a. x-int (0, 0) ; y-int (0,0)

b. 

13. $x = 3$ 14. $y = 4$

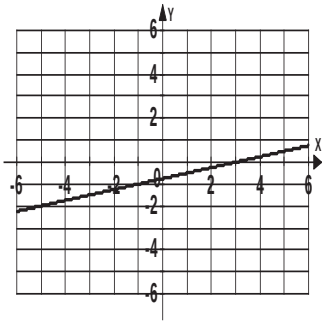
4.2 Form III

1. x-int (0, 0) ; y-int (0, 0) 2. x-int (–3, 0) ; y-int (0, –3) 3. x-int (–4, 0) ; y-int none

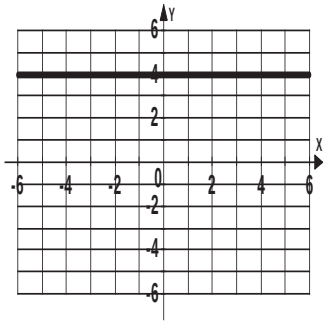
4. x-int (5, 0) ; y- int (0, –4) 5. x-int $\left(\frac{15}{2},\ 0\right)$; y-int (0, –5) 6. x-int (3, 0) ; y-int $\left(0,\ \frac{9}{4}\right)$

7. x-int $\left(\frac{12}{5},\ 0\right)$; y-int (0, 4) 8. x-int $\left(4,\ 0\right)$; y-int $\left(0,\ -\frac{24}{5}\right)$

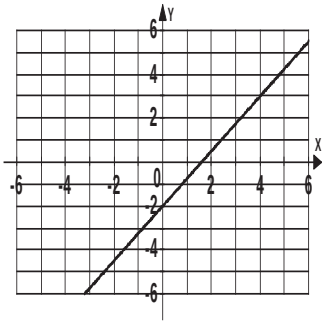
9a. x-int $\left(-\frac{3}{4},\ 0\right)$; y-int (0, 3)

b. 

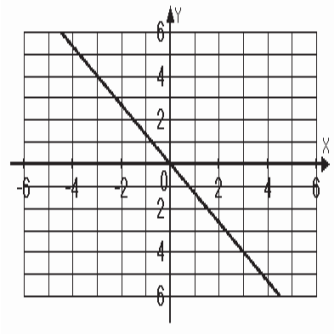
10a. x- int none ; y- int (0, –2)

b. 

11a. x-int $\left(\frac{8}{5},\ 0\right)$; y- int (0,–2)

b. 

12a. x-int (0, 0) ; y-int (0,0)

b. 

13. $x = 1$ 14. $y = -2$

4.3 Form I

1a. $m = \frac{2}{11}$ b. rises 2a. $m = \frac{21}{5}$ b. rises 3a. $m = -\frac{3}{7}$ b. falls
4a. m is undefined b. vertical 5a. $m = 0$ b. horizontal 6. $m = 1$ 7. $m = 3$ 8. $m = -4$
9. $m = 0$ 10. m is undefined 11. parallel 12. perpendicular 13. neither 14. 43% 15. 3 ft.

4.3 Form II

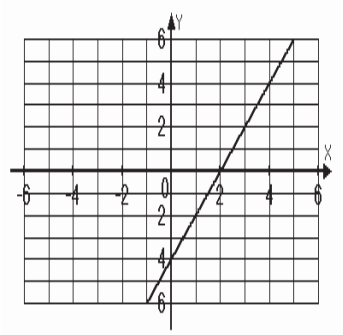
1a. $m = \frac{1}{2}$ b. rises 2a. m is undefined b. vertical 3a. $m = \frac{3}{5}$ b. rises 4a. $m = -\frac{3}{5}$ b. falls
5a. $m = 0$ b. horizontal 6. $m = \frac{2}{3}$ 7. m is undefined 8. $m = -\frac{3}{5}$ 9. $m = 0$ 10. $m = -3$
11. neither 12. parallel 13. perpendicular 14. $m = \frac{4}{3}$ 15. 55%

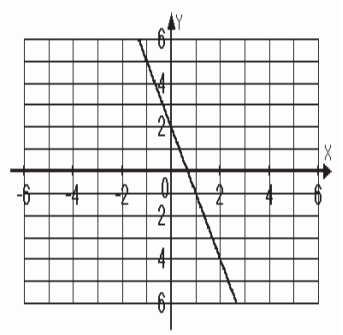
4.3 Form III

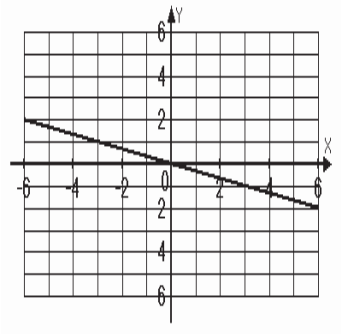
1a. m is undefined b. vertical 2a. $m = -\frac{1}{5}$ b. falls 3a. $m = -3$ b. falls
4a. $m = 0$ b. horizontal 5a. $m = \frac{4}{13}$ b. rises 6. $m = 0$ 7. $m = -\frac{3}{2}$ 8. m is undefined
9. $m = 2$ 10. $m = -\frac{5}{3}$ 11. neither 12. perpendicular 13. parallel 14. 50% 15. 58%

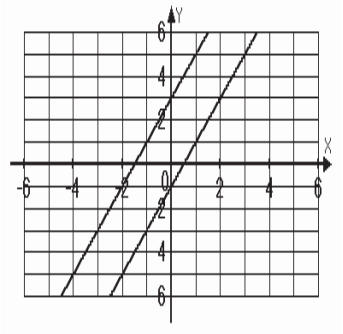
4.4 Form I

1. $m = -8$ 2. $m = 6$ 3. $m = 0$ 4. $m = -1$ 5. $m = 7$ 6. $m = -3$ 7. y-intercept (0, 0)
8. y-intercept (0, –7) 9. y-intercept (0, 2) 10. y-intercept (0, 4)

11. 

12. 

13. 

14. 

parallel

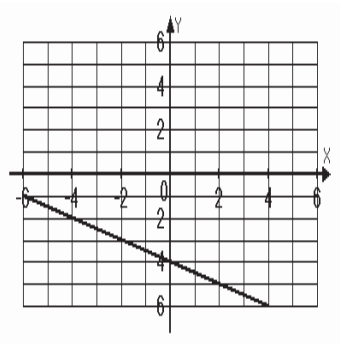
15. m = 3; The cost of the service increases $3 every mile the car is towed. b = 65; The cost of the service is $65 if the car is not towed.

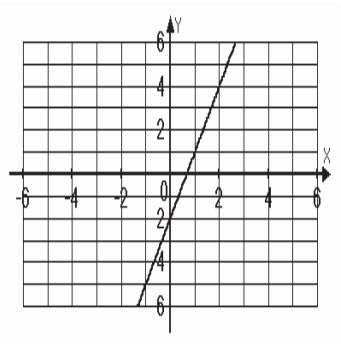
4.4 Form II

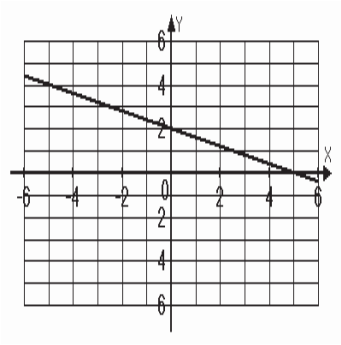
1. $m = -\frac{2}{3}$ 2. $m = \frac{3}{5}$ 3. $m = 0$ 4. $m = \frac{7}{2}$ 5. $m = -\frac{3}{5}$ 6. $m = -\frac{3}{4}$

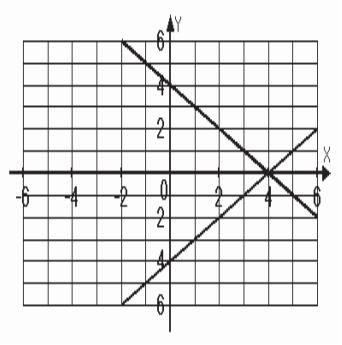
7. y-intercept $\left(0, -\frac{3}{2}\right)$ 8. y-intercept $\left(0, -\frac{5}{2}\right)$ 9. y-intercept $(0, -3)$

10. y-intercept $\left(0, -\frac{1}{2}\right)$

11. 

12. 

13. 

14. 

perpendicular

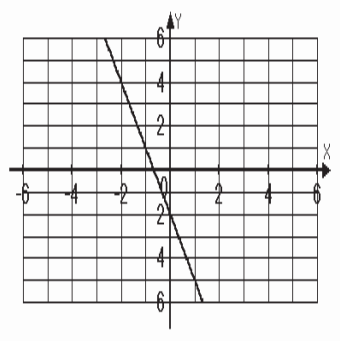
15. $m = -3$; The amount of water in the bucket decreases 3 ounces every minute. $b = 110$; at $x = 0$, the amount of water in the bucket was 110 ounces.

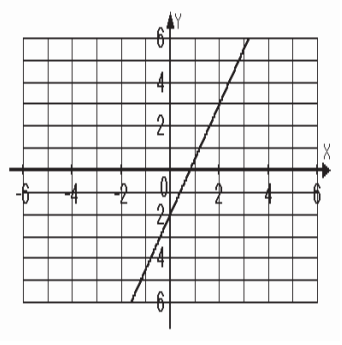
4.4 Form III

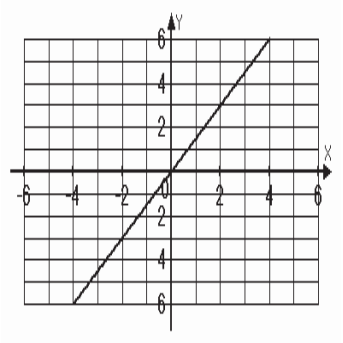
1. $m = \frac{4}{3}$ 2. $m = 0$ 3. $m = \frac{2}{5}$ 4. $m = \frac{7}{2}$ 5. $m = \frac{1}{5}$ 6. $m = 2$

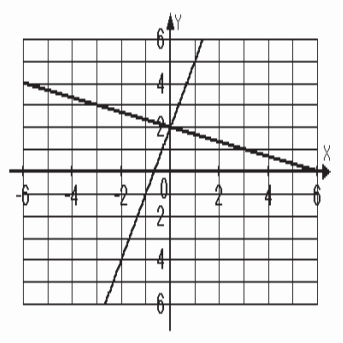
7. y-intercept $\left(0, -\frac{5}{3}\right)$ 8. y-intercept $\left(0, -\frac{7}{4}\right)$ 9. y-intercept $\left(0, \frac{1}{3}\right)$

10. y-intercept $(0, 1)$

11. 

12. 

13. 

14. 

15. $m = 32$; The speed of the ball increases 32 feet per second every second. $b = 0$; The speed of the ball was 0 the moment it was dropped.

4.5 Form I

1a. $y-1=1(x-2)$ b. $y=x-1$ 2a. $y-4=-2(x-4)$ b. $y=-2x+12$
3a. $y-2=4(x-0)$ b. $y=4x+2$ 4a. $y-2=8(x-4)$ b. $y=8x-30$
5a. $y-3=-9(x-4)$ b. $y=-9x+39$ 6a. $y+4=5(x+3)$ b. $y=5x+11$
7a. $y-1=1(x-0)$ or $y-5=1(x-4)$ b. $y=x+1$
8a. $y-8=-1(x-0)$ or $y-6=-1(x-2)$ b. $y=-x+8$
9a. $y-0=1(x-2)$ or $y-2=1(x-4)$ b. $y=x-2$
10a. $y-1=1(x+4)$ or $y-4=1(x+1)$ b. $y=x+5$
11a. $y-16=1(x-12)$ or $y-5=1(x-1)$ b. $y=x+4$
12a. $y-2=2(x+1)$ or $y+2=2(x+3)$ b. $y=2x+4$
13a. $y-5=-1(x+3)$ or $y-3=-1(x+1)$ b. $y=-x+2$ 14. $y=4x+2$
15. $y=-40x+175$

4.5 Form II

1a. $y-5=\frac{5}{3}(x-0)$ b. $y=\frac{5}{3}x+5$ 2a. $y-2=-\frac{2}{3}(x-0)$ b. $y=-\frac{2}{3}x+2$
3a. $y-3=-\frac{3}{5}(x-10)$ b. $y=-\frac{3}{5}x+9$ 4a. $y-5=\frac{5}{3}(x-0)$ b. $y=\frac{5}{3}x+5$
5a. $y-10=-\frac{4}{5}(x+5)$ b. $y=-\frac{4}{5}x+6$ 6a. $y+8=\frac{3}{4}(x-8)$ b. $y=\frac{3}{4}x-14$
7a. $y+5=-1(x-1)$ or $y-1=-1(x+5)$ b. $y=-x-4$
8a. $y+3=3(x-0)$ or $y-6=3(x-3)$ b. $y=3x-3$
9a. $y+9=3(x+1)$ or $y+15=3(x+3)$ b. $y=3x-6$
10a. $y-3=\frac{1}{4}(x-2)$ or $y-1=\frac{1}{4}(x+6)$ b. $y=\frac{1}{4}x+\frac{5}{2}$
11a. $y-2=-\frac{1}{2}(x-4)$ or $y-4=-\frac{1}{2}(x-0)$ b. $y=-\frac{1}{2}x+4$
12a. $y-0=5(x-0)$ or $y-5=5(x-1)$ b. $y=5x$
13a. $y-0=\frac{4}{3}(x-3)$ or $y+4=\frac{4}{3}(x-0)$ b. $y=\frac{4}{3}x-4$ 14. $y=0.2x+0.45$
15. $y=-52x+198$

4.5 Form III

1a. $y+5=-\frac{1}{3}(x-1)$ b. $y=-\frac{1}{3}x+\frac{16}{3}$ 2a. $y-4=-\frac{2}{7}(x-2)$ b. $y=-\frac{2}{7}x+\frac{32}{7}$

3a. $y-2=-\frac{4}{5}(x+1)$ b. $y=-\frac{4}{5}x+\frac{6}{5}$ 4a. $y-0=\frac{3}{4}(x-1)$ b. $y=\frac{3}{4}x-\frac{3}{4}$

5a. $y+5=\frac{1}{2}(x-2)$ b. $y=\frac{1}{2}x-6$ 6a. $y-4=\frac{3}{5}(x+1)$ b. $y=\frac{3}{5}x+\frac{23}{5}$

7a. $y-2=-\frac{3}{4}(x-1)$ or $y-5=-\frac{3}{4}(x+3)$ b. $y=-\frac{3}{4}x+\frac{11}{4}$

8a. $y-7=\frac{1}{5}(x-4)$ or $y-6=\frac{1}{5}(x+1)$ b. $y=\frac{1}{5}x+\frac{31}{5}$

9a. $y-5=\frac{1}{6}(x+2)$ or $y-6=\frac{1}{6}(x-4)$ b. $y=\frac{1}{6}x+\frac{16}{3}$

10a. $y-3=-\frac{1}{2}(x-3)$ or $y-7=-\frac{1}{2}(x+5)$ b. $y=-\frac{1}{2}x+\frac{9}{2}$

11a. $y+5=1(x-3)$ or $y+6=1(x-2)$ b. $y=x-8$

12a. $y-2=-\frac{1}{2}(x-0)$ or $y-1=-\frac{1}{2}(x-2)$ b. $y=-\frac{1}{2}x+2$

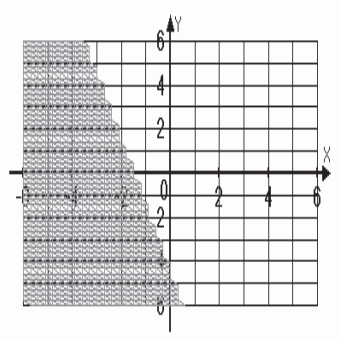
13a. $y-7=\frac{4}{5}(x-15)$ or $y+1=\frac{4}{5}(x-5)$ b. $y=\frac{4}{5}x-5$ 14. $y=-2860x+13{,}440$

15. $y=397x+2342$

4.6 Form I

1. yes 2. no 3. no 4. yes 5. no 6. yes 7. no

8.



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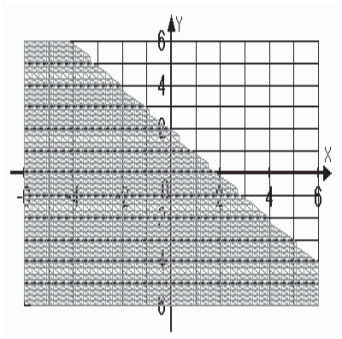

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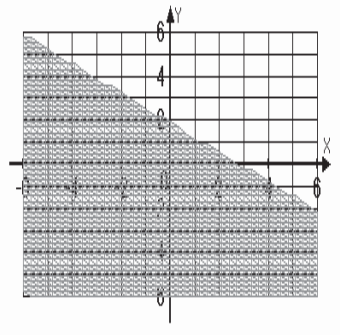

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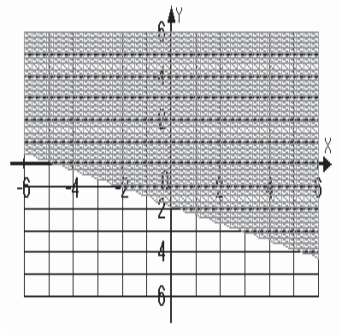
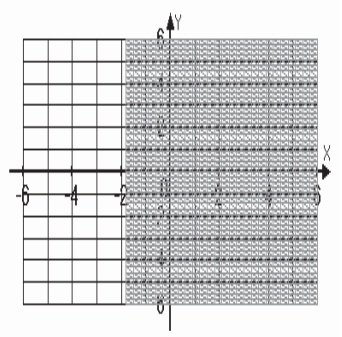
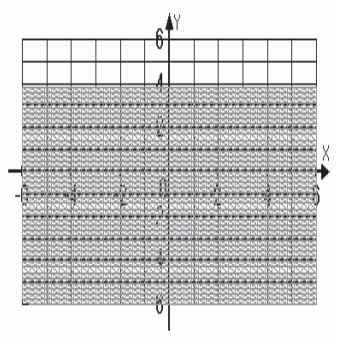
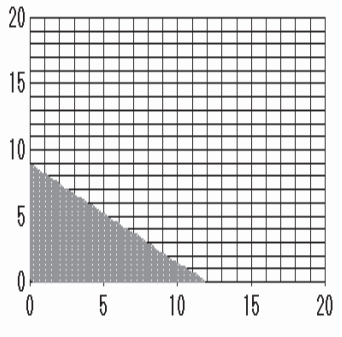
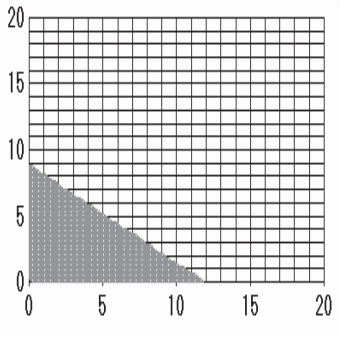


12. 

13. 

14. 

15. 

4.6 Form II

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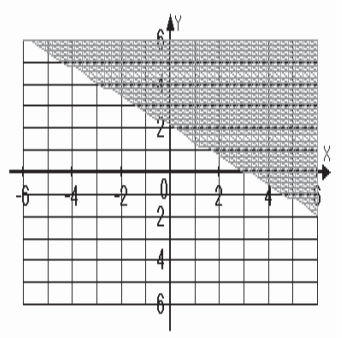
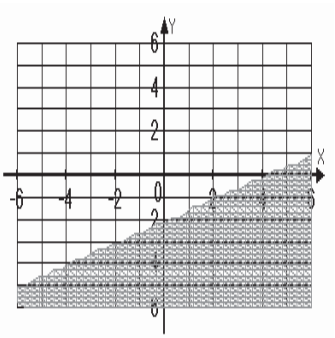
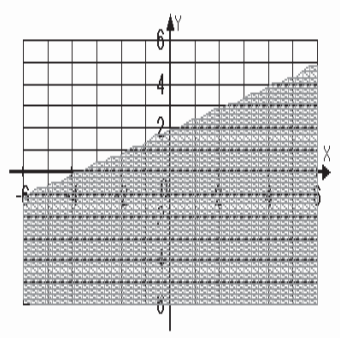
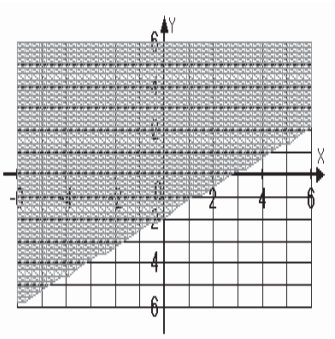
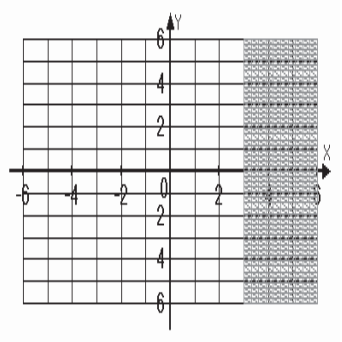
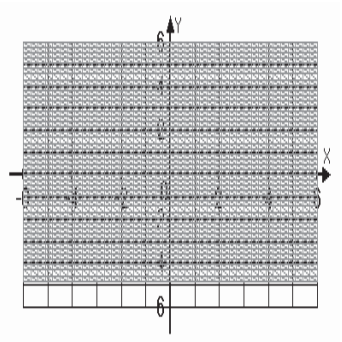
8. 

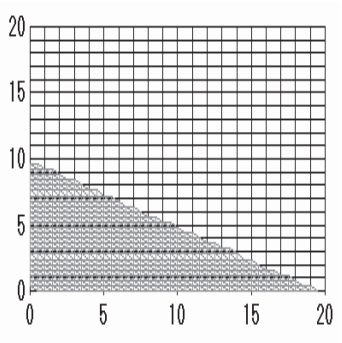
9. 

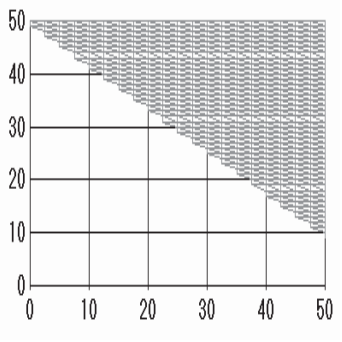
10. 

11. 

12. 

13. 

14. 

15. 

4.6 Form III

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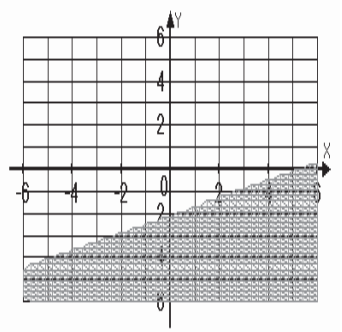
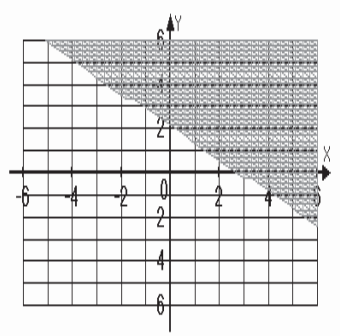
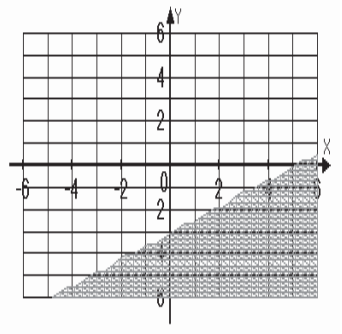
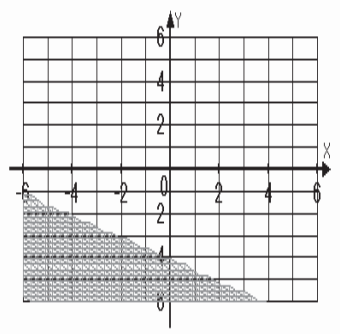
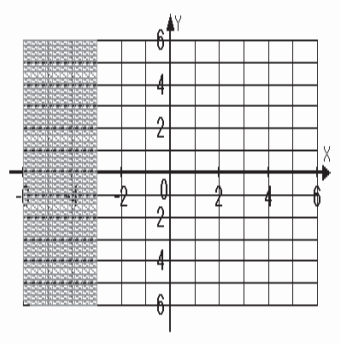
8. 

9. 

10. 

11. 

12. 
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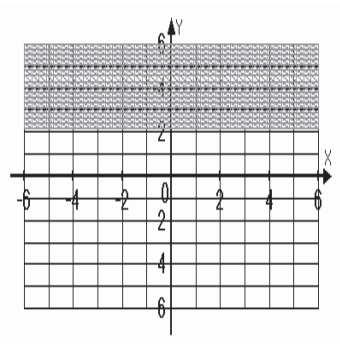
13. 
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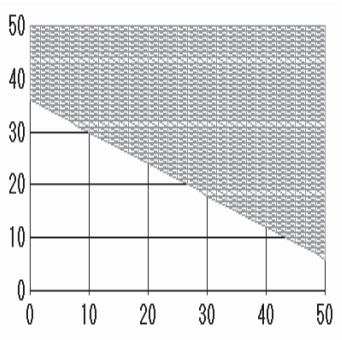
14. 
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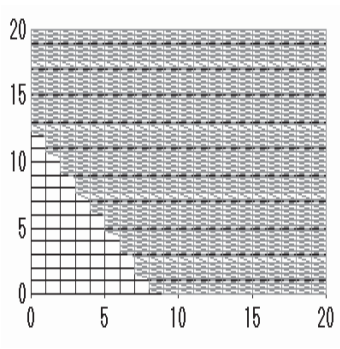
15. 
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