Transition to College Mathematics

43. $\frac{13}{5}$

45. $\frac{2}{5}$

47. $\frac{26}{5}$

49. $\frac{4}{9}$

51. $\frac{4}{9}$

53. $\frac{13}{5}$

55. –

1. 6.5%
3. 25.93%
5. (a) \$79.35 (b) $1.058\boldsymbol{x}$
7. (a) 12,568.5 (b) $0.9975\boldsymbol{x}$
9. $0.75\boldsymbol{x}$, $0.795\boldsymbol{x}$
11. (a) \$96,750 (b) $2.15\boldsymbol{x}$
13. \$1,000
15. $\frac{35}{54}\boldsymbol{x}$
17. (a) \$638 (b) $\boldsymbol{A} = 9\boldsymbol{h} + 0.05\boldsymbol{S}$
19. (a) \$560 (b) $140\boldsymbol{x}$
21. (a) \$160 (b) $25\boldsymbol{n}$-15
23. 7.8 miles
25. (a) 27.1 (b) 221 lbs.
27. 18 min. 59 sec.
29. 5.11 g.
31. 4.5 ft./sec.
33. 49.7 m.p.h.
35. 5 min.
37. 62.5 cm.
39. 200,000 cm.
41. 139 in.
43. 7.2 gal.

1. 9,600 cm^2

3. 9 feet

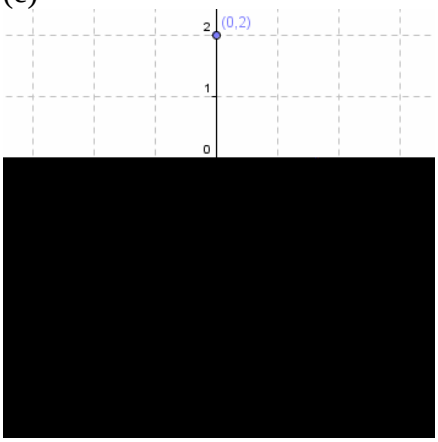
5. 48 feet

7. (a) 36 cm (b) $4\boldsymbol{n}+8$ cm

9. (a) 42 feet (b) $6\boldsymbol{n}+6$ feet

11. (a) 12.25 m^2

(e)

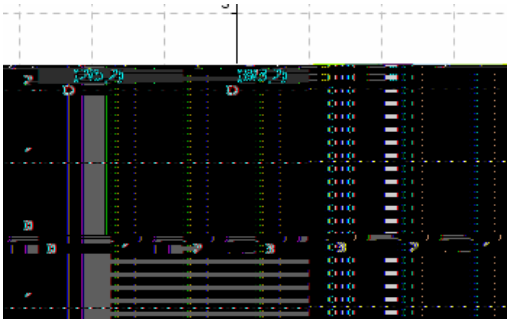


distance: 6

(f)

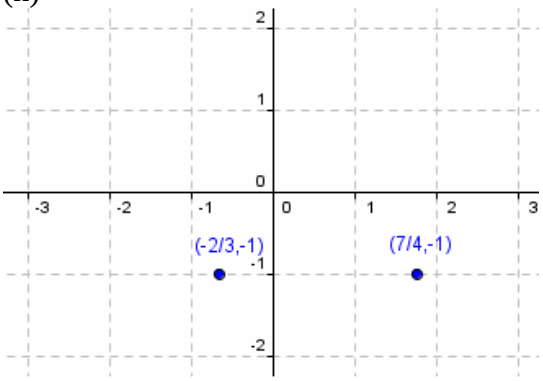
distance: 4

(g)



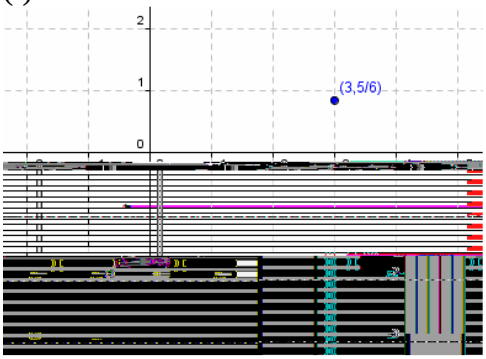
distance: $\frac{34}{15}$

(h)



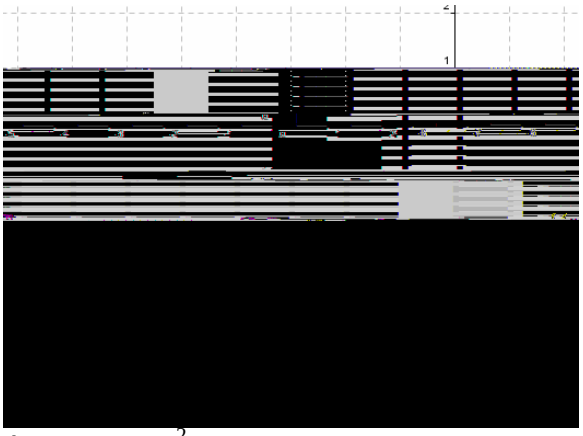
distance: $\frac{29}{12}$

(i)



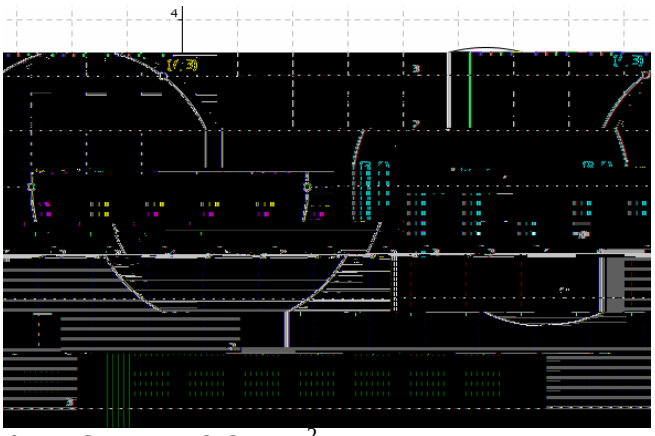
distance: $\frac{65}{24}$

3.



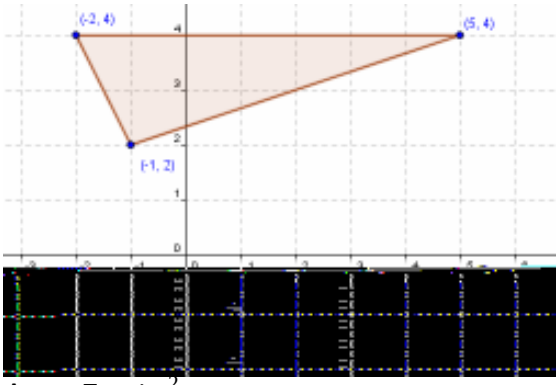
Area:12 units^2, Perimeter:14 units

5.



Area: $6.25\pi \approx 19.6$ units^2, Perimeter: $5\pi \approx 15.7$ units

7.



Area: 7 units^2

9. (a) $\boldsymbol{P}(-2,-2), \boldsymbol{Q}(5,-2)$ (b) $\boldsymbol{P}(-2,-1), \boldsymbol{Q}(5,-1)$

1. 2.4 feet
3. $5\sqrt{2} \approx 7.1$in
5. 24 feet
7. 1050 feet
9. $305.47
11. 32.5 miles
13. 4.7 feet

1. $-8x^{12}$
3. $9a^8b^2c^{10}$
5. $49a^8$
7. $\dfrac{y^2z^9}{x^5}$
9. $\dfrac{12}{a^2}$
11. $\dfrac{v^4}{16u^4}$
13. $\dfrac{1}{8x^9}$
15. $\dfrac{1}{u^6}$
17. $\dfrac{y^{12}}{x^8}$
19. $\dfrac{-64x^6}{y^{21}}$
21. $\dfrac{-8a^9}{b^{12}c^{21}}$
23. $\dfrac{1}{25a^2b^8}$
25. $\dfrac{1}{9y^6}$
27. $\dfrac{x^{22}}{4}$
29. $\dfrac{z^3}{x^7y^6}$
31. $\dfrac{3c^7}{4a^3}$
33. $\dfrac{9y^7}{2x}$
35. $\dfrac{1}{64}$
37. $\dfrac{1}{5}$
39. $\dfrac{1}{8}$
41. $\dfrac{9}{4}$
43. -32
45. 63

1. $2x^3\sqrt{3}$
3. $9x^4\sqrt{x}$
5. $2z^3\sqrt{6z}$
7. $\sqrt{}$

37. $\frac{1}{5}$

1. $3x \quad 2$

1. $9a^3b, \frac{5b^3}{a^2}$

3. $x(x-1), \frac{3(x-1)}{5x}$

5. $x^2(x+3), \frac{(x+3)^2}{x^5(2x-1)}$

7. $\frac{3y^3}{4x^4z}$

9. $\frac{-4}{7}$

11. $\frac{x+3}{1+2x^2}$

13. $\frac{1+b^2}{1+a^2}$

15. $\frac{x^2+y^2+z^2}{xyz}$

17. $t-1$

19. $x-2$

21. $\frac{x+2}{x+1}$

23. $\frac{x-1}{x-2}$

25. $\frac{x+1}{3(x+2)}$

27. $\frac{y-4}{y+2}$

29. $\frac{x+y}{3x-y}$

31. $\frac{3}{2x-1}$

33. $\frac{x+2}{3(x-2)}$

35. $\frac{(t+3)(t-6)}{(2t+3)(t+1)}$

1. $\frac{x^5}{2y^3}$

3. 6

5. $\frac{y}{x^2}$

7. $-(x+3)$

9. $\frac{x}{4(x-3)}$

11. $\frac{x+2}{x-1}$

13. $\frac{x+y}{5x}$

15. $x(x+2)$

17. $\frac{2a+3b}{a+b}$

1. x^4y^7z

3. $36(x-1)^3$

5. $(x+3)(x+2)^2$

7. $(x+3)(x+5)(x-5)$

9. $\frac{21}{6x^2}, \frac{10}{6x^2}$

11. $\frac{3x^3}{36x^5y^3}, \frac{2y^2}{36x^5y^3}$

13. $\frac{3(x-1)}{x(x-1)^2}, \frac{7x}{x(x-1)^2}$

15. $\frac{x(x+2)}{(x+1)(x+2)(x+3)}, \frac{(x+5)(x+3)}{(x+1)(x+2)(x+3)}$

17. $\frac{y-4}{7x^2}, 7x^2$

19. $\frac{11x}{12}, 12$

21. $\frac{t+s}{st}, st$

23. $\frac{3c-4}{c^4}, c^4$

25. $\frac{2(4x+3)}{x(x+2)}, x(x+2)$

27. $\frac{5x-6}{x-2}, x-2$

29. $\frac{6st+4rt+3rs}{12rst}, 12rst$

31. $\frac{x(x+6)}{x+7}, x+7$

33. $\frac{a^2+a+1}{a^3}, a^3$

35. $\frac{1}{5-x}, 5-x$

37. $\frac{x-9}{(x-2)(x-3)(x+5)}, (x-2)(x-3)(x+5)$

39. $\dfrac{x^2+x+4}{(x+1)^2(x-1)}, (x+1)^2(x-1)$

1. $x = 6$

3. $x = \frac{14}{3}$

5. $x = 9$

7. $x = -12$

9. $x = 3$

11. $x = 0$

13. $x = \frac{10}{7}$

15. $x = 60$

17. $x = \frac{35}{3}$

19. $x = -3\pi$

21. $x = -7$

23. $x = -\frac{2}{17}$

25. $x = 200$

27. $x = 27$

29. $x = \frac{20}{3}$

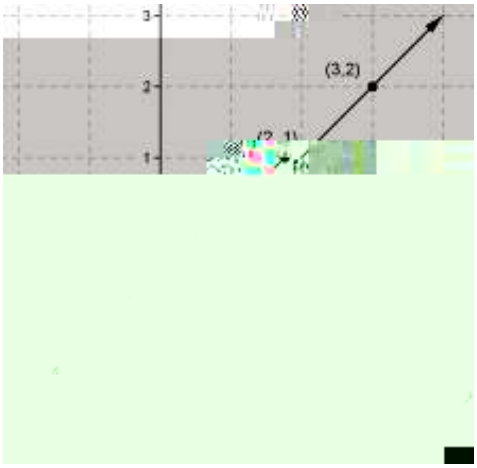
31. $x = \frac{11}{3}$

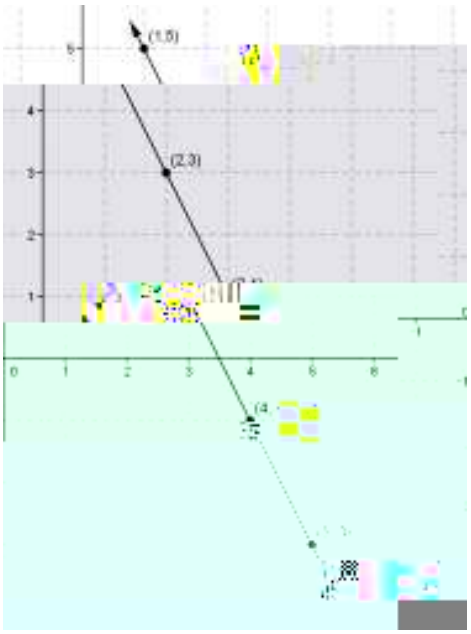
33. $x = \frac{30}{11}$

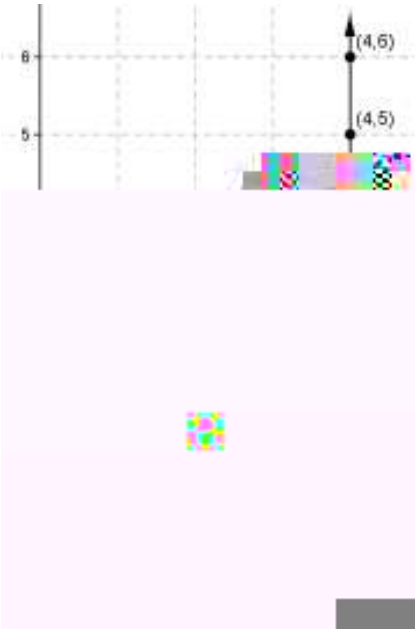
35. 27 in.

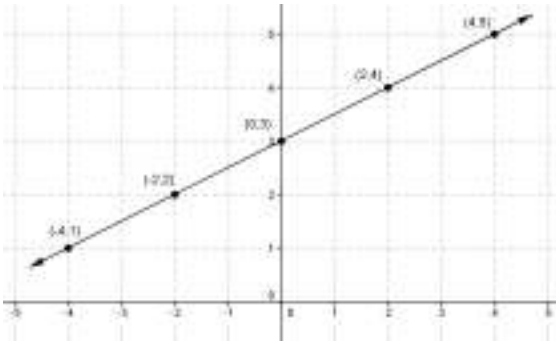
37. $\frac{84}{\pi} \approx 26.7$


19
4


(3,2)

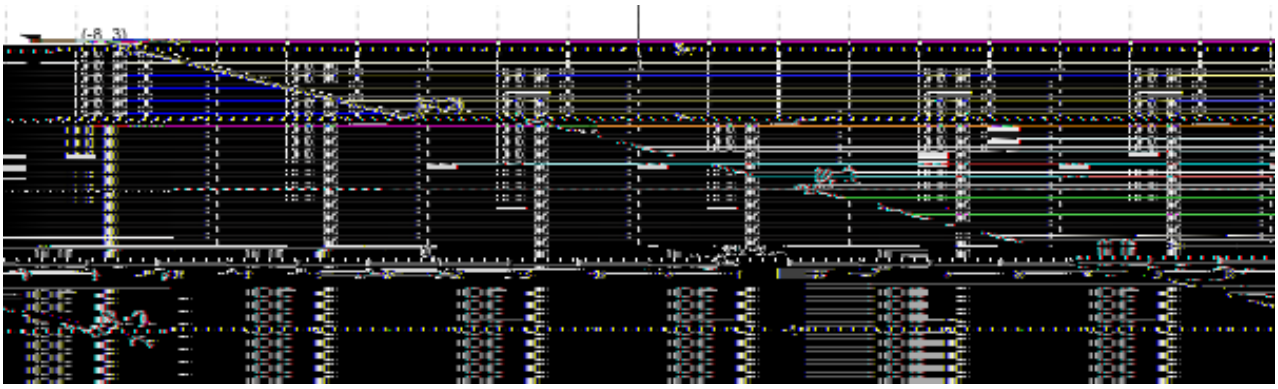

(1,5)
(2,3)


(4,6)
(4,5)

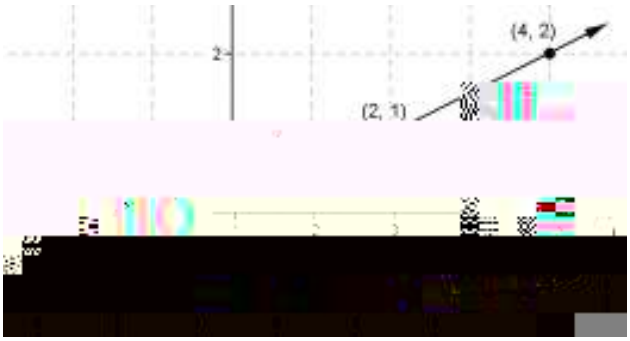

(4,3)
(2,4)
(0,3)
(-2,2)
(-4,1)

11.

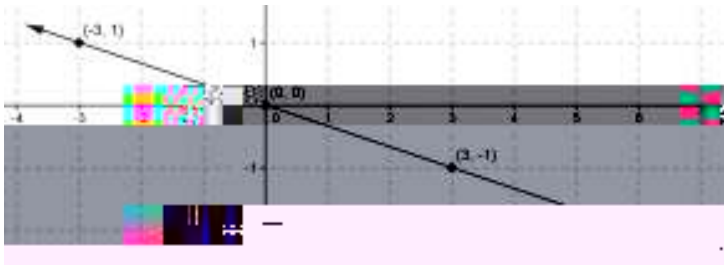
x	y
0	1
-8	3
-4	2
4	0
8	-1



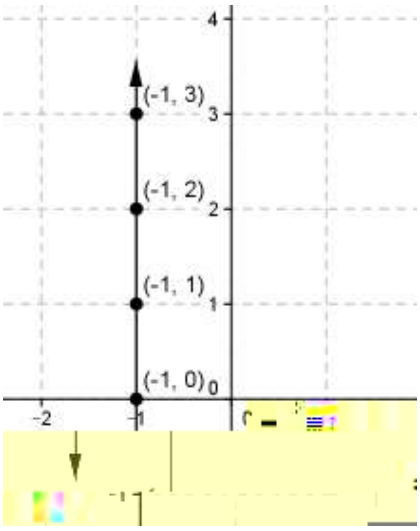
13. Slope: $\frac{1}{2}$



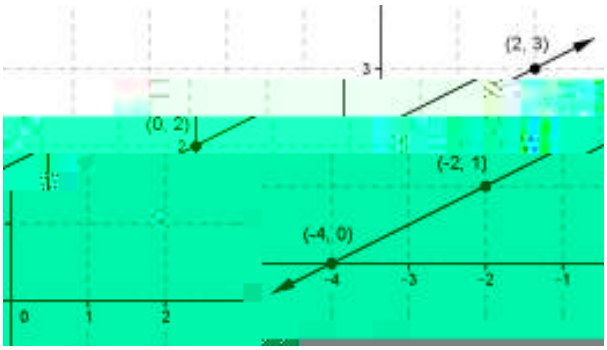
15. Slope: $-\frac{1}{3}$



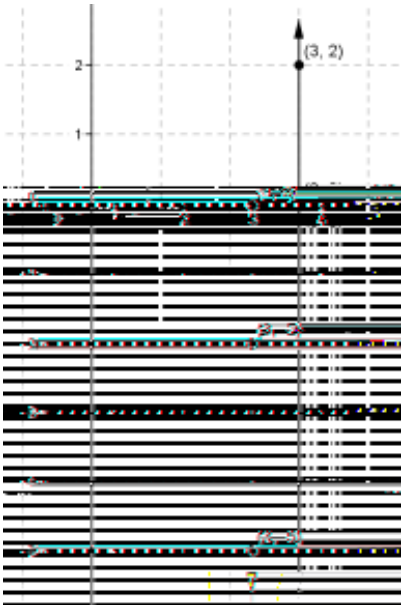
17. No Slope



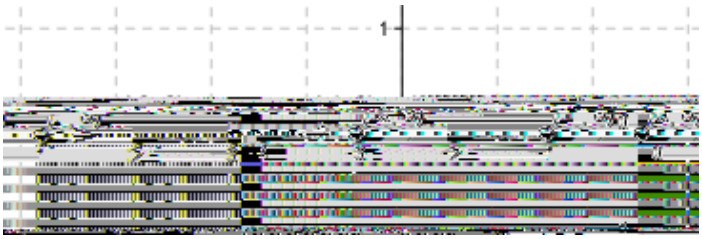
19. Slope: $\frac{1}{2}$



21. No Slope



23. Slope: 0



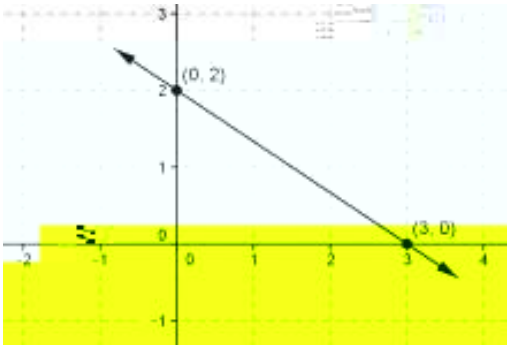
25. Slope: $-\frac{1}{4}$

27. $\frac{3}{2}$

29. $\frac{1}{2}$

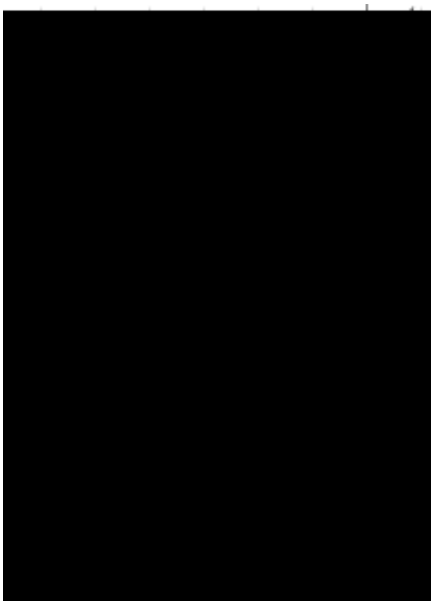
31. -3

1. ***x***-intercept: 3, ***y***-intercept: 2

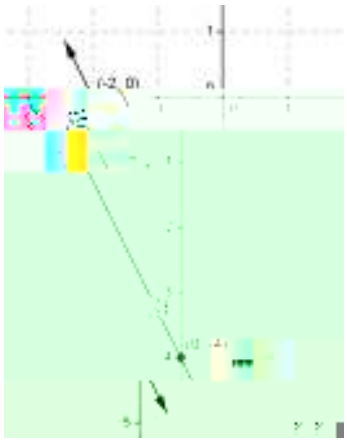


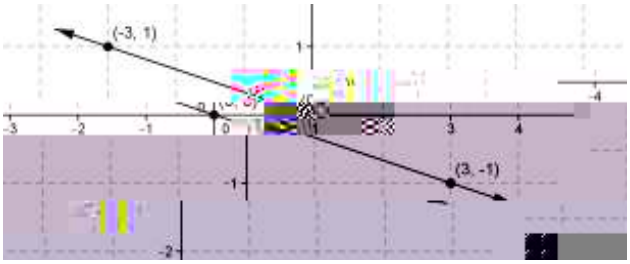
Slope: $-\frac{2}{3}$, $y = -\frac{2}{3}x + 2$

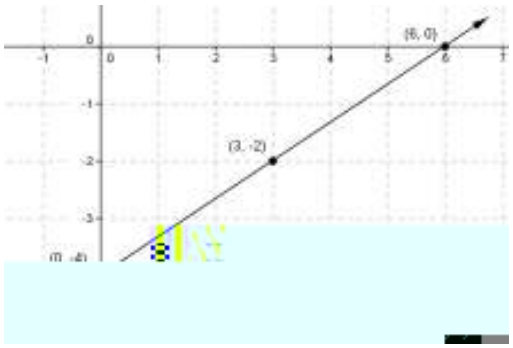
3. ***x***-intercept: -6, ***y***-intercept: 9

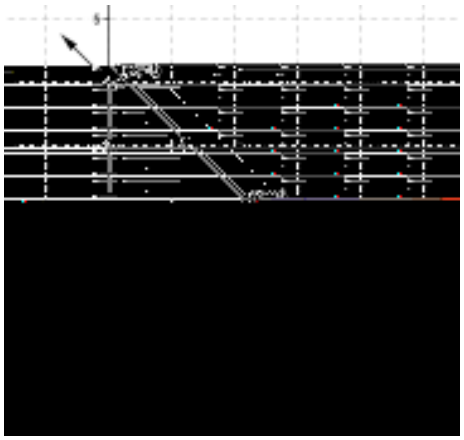


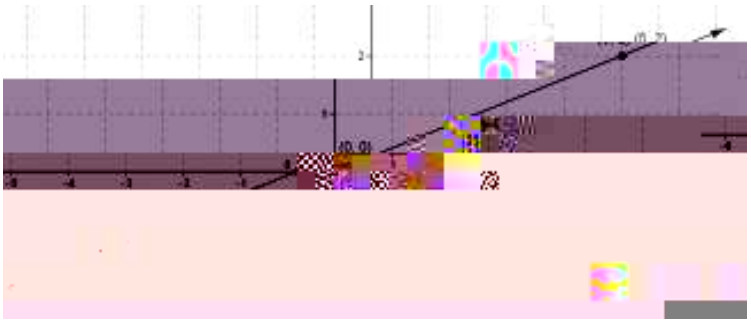
Slope:






(6, 0)
(3, -2)

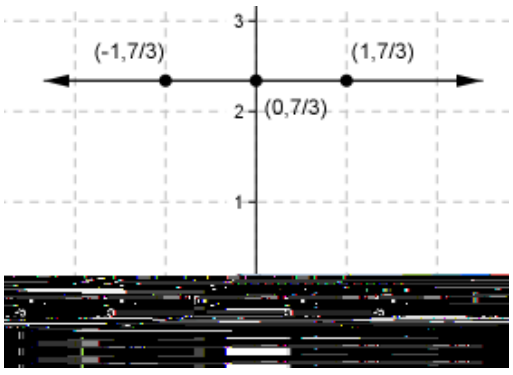




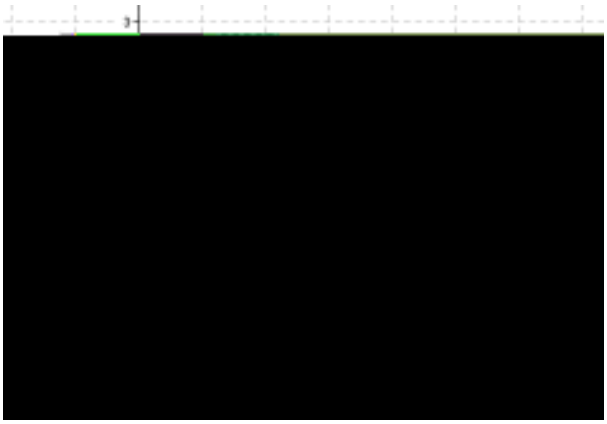
27. Slope: $-\frac{5}{3}$, ***x***-intercept: -3, ***y***-intercept: -5

29. Slope: $\frac{2}{3}$, ***x***-intercept: $\frac{9}{2}$, ***y***-intercept: -3

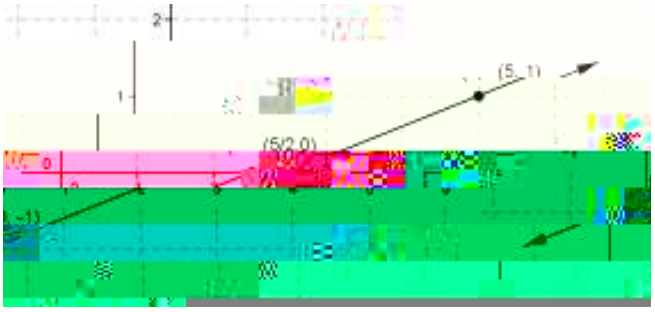
31. Slope: 0, ***x***-intercept: none, ***y***-intercept: $\frac{7}{3}$



33. Slope: $-\frac{2}{3}$, ***x***-intercept: 3, ***y***-intercept: 2



35. Slope: $\frac{2}{5}$, ***x***-intercept: $\frac{5}{2}$, ***y***-intercept: -1



37. $-\frac{2}{3}$

39. $\frac{5}{4}$

41. 6

43. 5

45. $-\frac{7}{3}$

47. $\frac{6}{5}$

49. $y = x + 3$

51. $y = -\frac{1}{2}x + 3$

53. $y = \frac{2}{3}x - \frac{14}{3}$

55. $y = \frac{3}{4}x - \frac{5}{2}$

1. parallel

3. perpendicular

5. neither

7. parallel

9. $y = 3x + 7$

11. $x = -2$

13. $y = -\frac{2}{3}x - \frac{10}{3}$

15. $y = -\frac{3}{5}x + \frac{13}{5}$

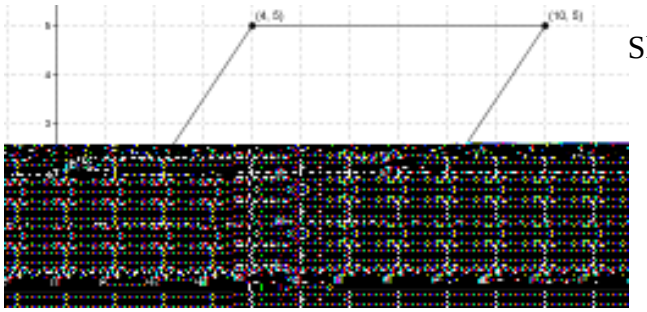
17. $x = -4$

19. $y = -\frac{3}{5}x - \frac{18}{5}$

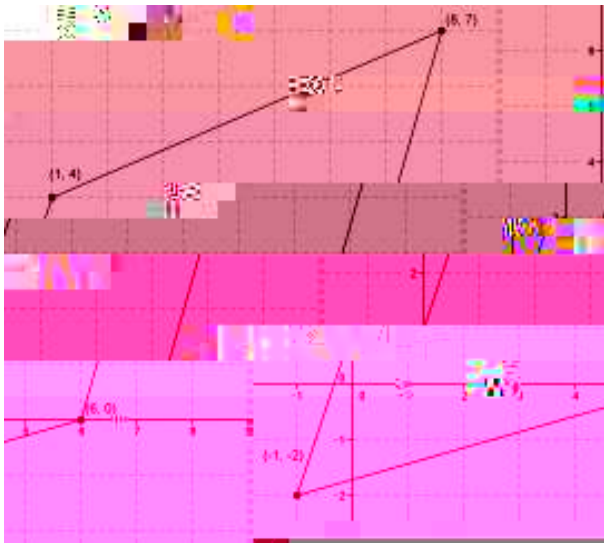
21. $y = -\frac{4}{5}x + 8$

23. $x = -3$

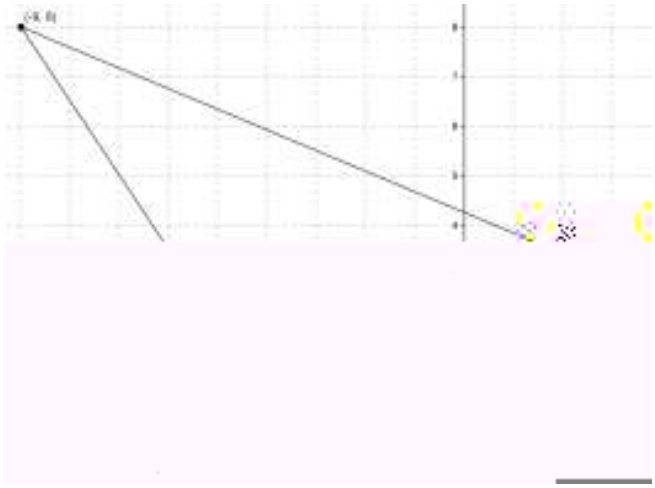
25. $y = \frac{4}{5}x + 3$

27. 

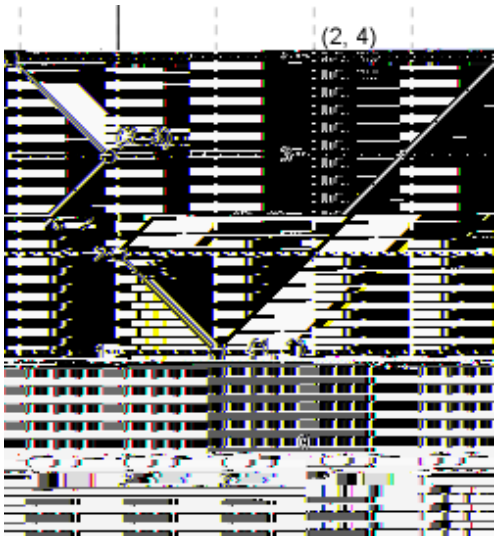
Slopes: 0 and $\frac{3}{2}$, parallelogram

29. 

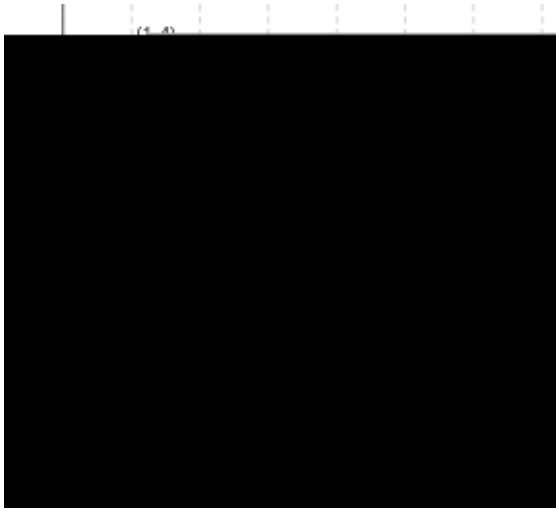
Slopes: $\frac{2}{7}$, $\frac{7}{2}$, $\frac{3}{7}$, and 3, not a parallelogram

31. 

Slopes: $\frac{2}{3}$, $-\frac{5}{12}$, and $-\frac{3}{2}$, right triangle

33. 

Slopes: 1 and -1, rectangle

35. 

Slopes: -1, $-\frac{4}{3}$, and $-\frac{6}{5}$, not collinear

1. $x = 2$ or $x = 3$

3. $x = -3$ or $x = -4$

5. $x = 2$ or $x = -7$

7. $x = \frac{1}{2}$ or $x = -3$

9. $D > 0$, $x = -1 + \sqrt{6}$ or $x = -1 - \sqrt{6}$

11. $D < 0$, no real solutions

13. $D > 0$, $x = -3 + 2\sqrt{2}$ or $x = -3 - 2\sqrt{2}$

15. $D = 0$, $x = -1$

17. $D < 0$, no real solutions

19.

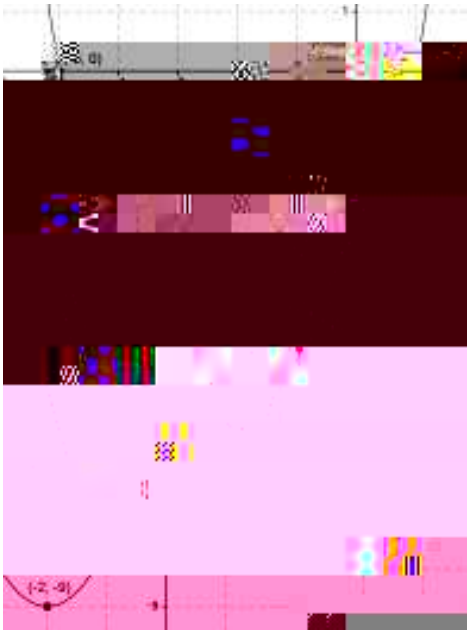
21. $x = 2$ or $x = -3$

23.

1. (a) vertex: $(-2,-9)$, min. value: -9

(b) ***x***-intercepts: -5,1 ***y***-intercept: -5

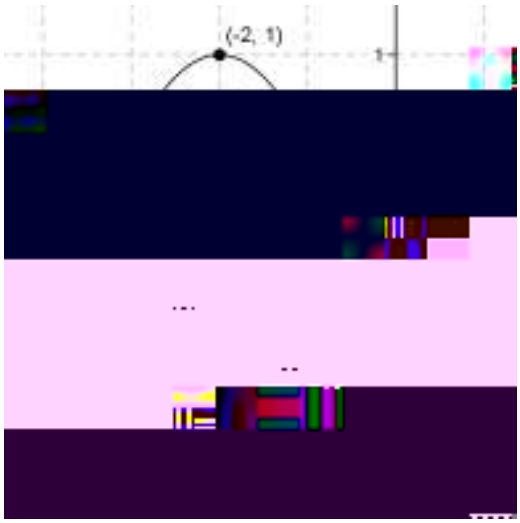
(c)



3. (a) vertex: $(-2,1)$, max. value: 1

(b) ***x***-intercepts; -3,-1 ***y***-intercept: -3

(c)



5. (a) vertex: $(-1,4)$, min. value: 4

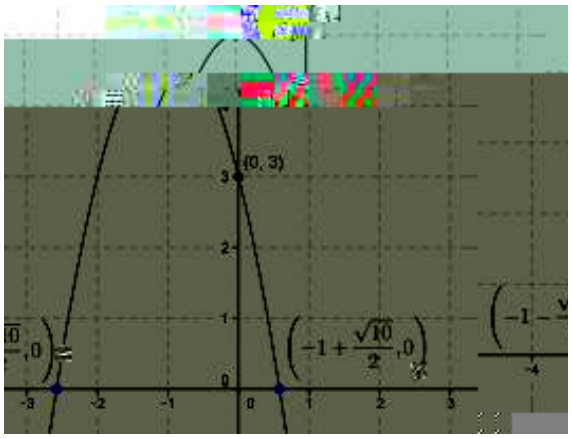
(b) no ***x***-intercepts, ***y***-intercept: 6

(c)

7. (a) vertex: $(-1,5)$, max. value: 5

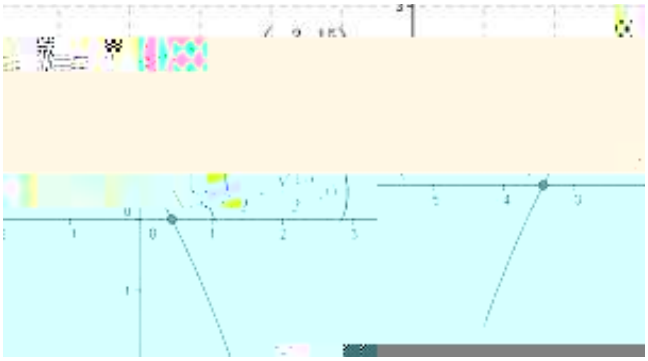
(b) ***x***-intercepts: $-1\pm\frac{\sqrt{10}}{2}$, ***y***-intercept: 3

(c)

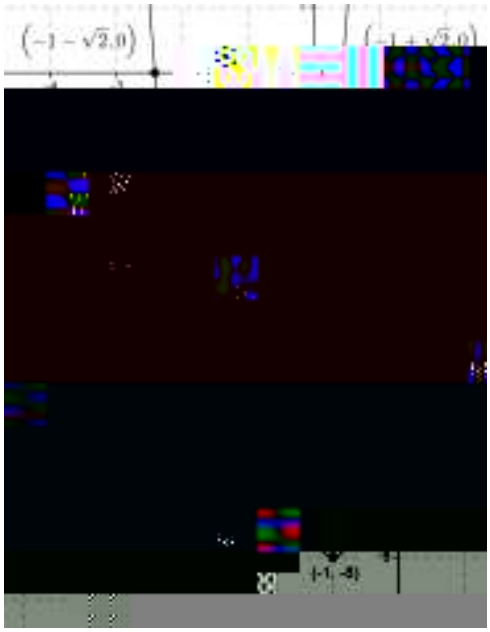


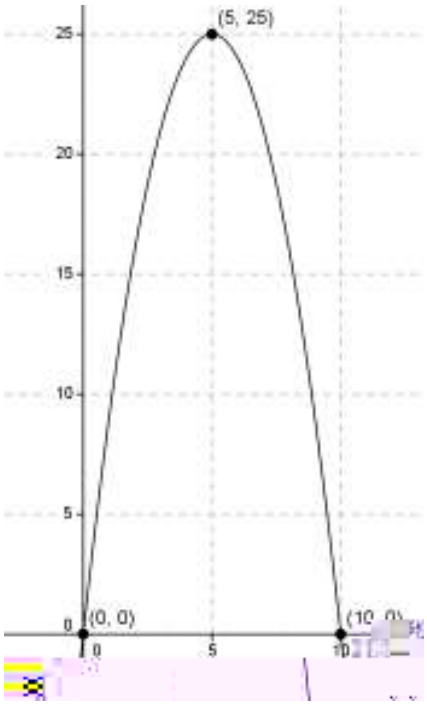
9. (a) vertex: $\left(-\frac{3}{2},\frac{15}{8}\right)$, max. value: $\frac{15}{8}$

(b) ***x***-intercepts: $\frac{3}{}$ $\underline{\sqrt{15}}$



11. (a) vertex: $(-1,-8)$, min. value: -8



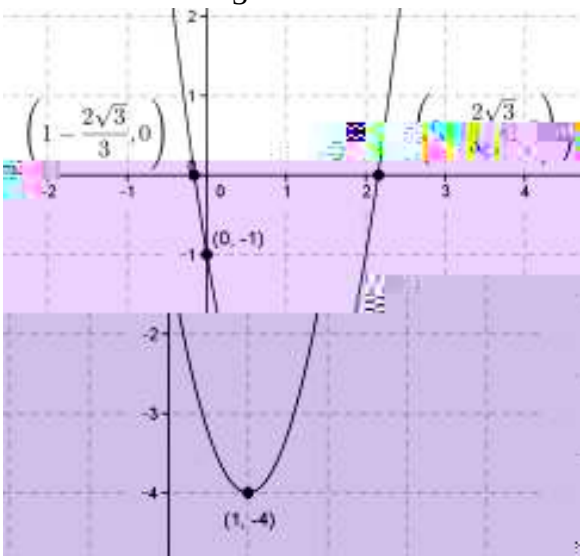


17. (a) $y = 3(x-1)^2 - 4$

(b) vertex: $(1,-4)$, min. value: -4

(c) x-intercepts: $1 \pm \frac{2\sqrt{3}}{3}$, y-intercept: -2

(d)

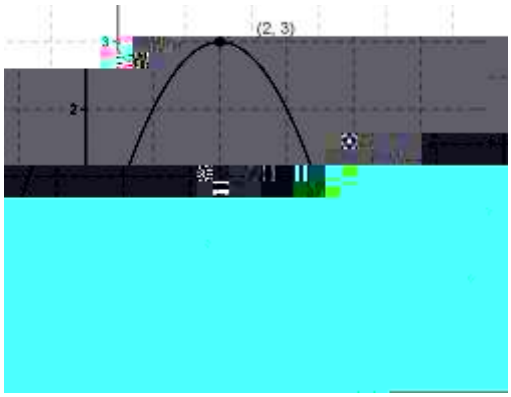


19. (a) $y = -(x-2)^2 + 3$

(b) vertex: $(2,3)$, max. value: 3

(c) x-intercepts: $2 \pm \sqrt{3}$, y-intercept: -1

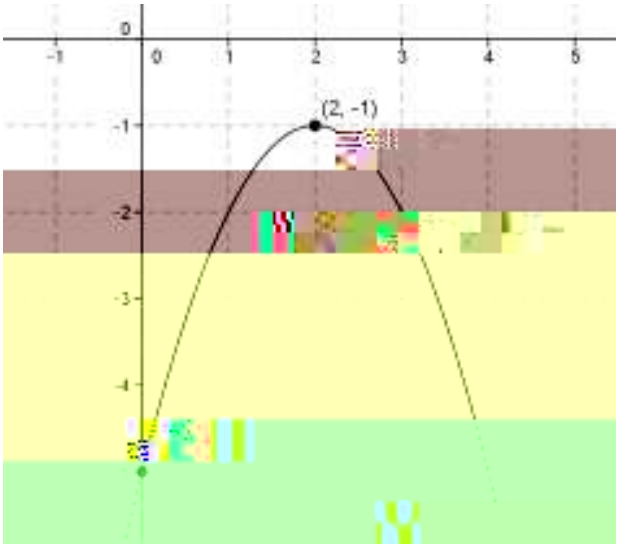
(d)



21. (a) $y = -(x-2)^2 - 1$

(b) vertex: $(2,-1)$, max. value: -1

(c) no x-intercepts, y-intercept: -5



23. (a) $y = (x+1)^2 - 3$

(b) vertex: $(-1,-3)$, min. value: -3

(c) x-intercepts: $\sqrt{}$

1. 5 and 7

3. 8 and 13

5. 7 and 21

7. 8, 24, and $8\sqrt{10}$

9. 19

11. 18 feet

13. 56 inches

15. $1,680

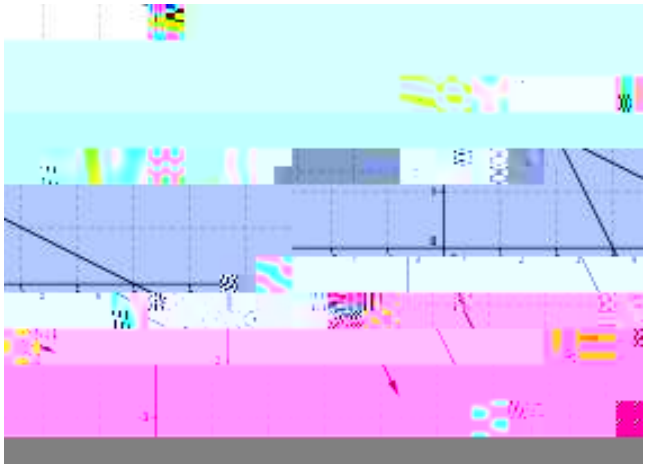
1.

Solution: $(3,1)$

3.

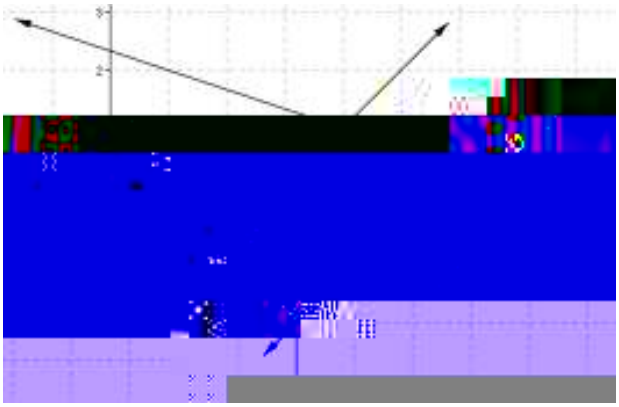
No solution.

5.



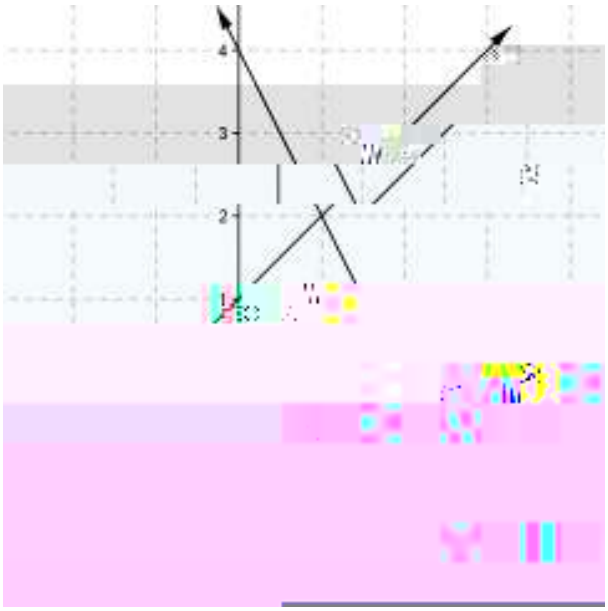
Solution: $(2,2)$

7.



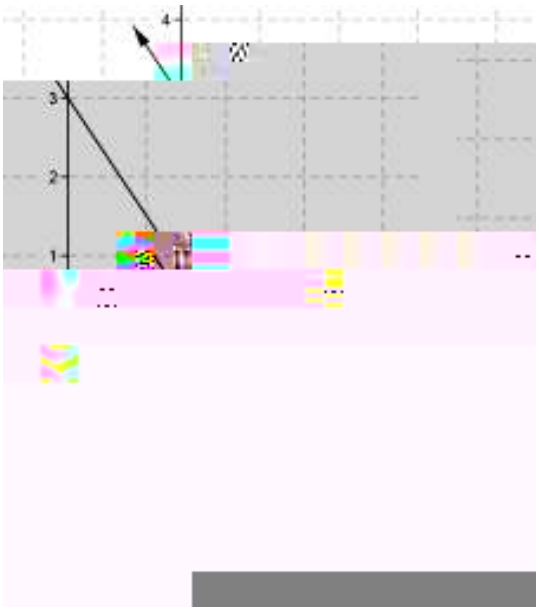
Solution: $(4,1)$

9.



Solution: $(1,2)$

11.

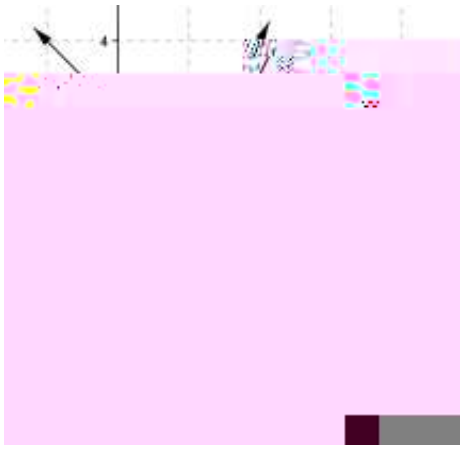


Infinitely many solutions

1. $\left(\frac{3}{5},\frac{11}{5}\right)$

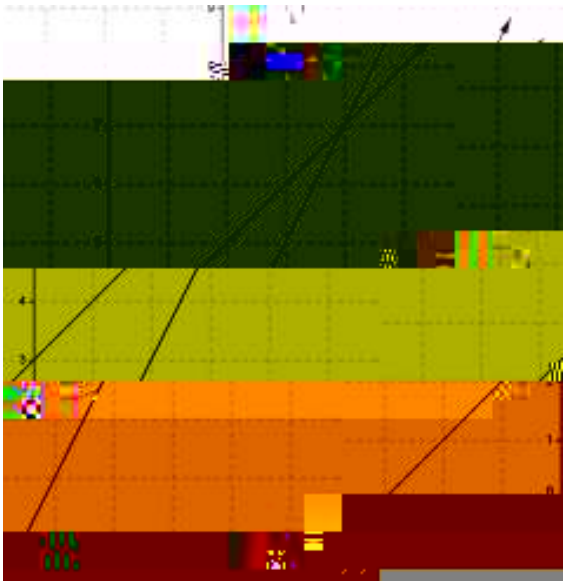
3. $(\ 1,2)$

41.



Solution: $(1,2)$

43.



Solution: $(4,7)$

1. 13, 8, 5, 4, 5

3. $\sqrt[3]{4}$, 1, 0, 1, $\sqrt[3]{4}$

5. $-\frac{5}{3}$, -3, 1, $-\frac{1}{3}$, $-\frac{3}{5}$

7. 0, 1, $\sqrt{2}$, 2, $\sqrt{6}$, 3

9. $3\sqrt{2}$, 2, 0, 0, 2, $2\sqrt{7}$

11. $-\frac{8}{15}$, $-\frac{4}{3}$, 0, $\frac{4}{-}$