

$$15) x > -2 \cap x \leq 3$$

$$16) x > 1 \cup x < 4$$

$$17) x \geq 0 \cup x \leq -4$$

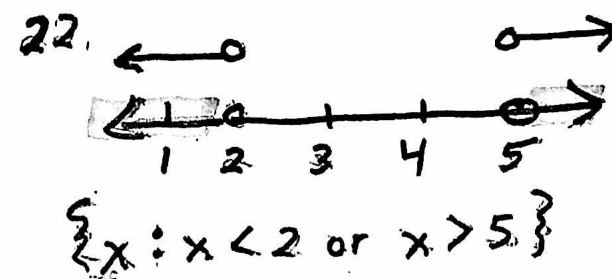
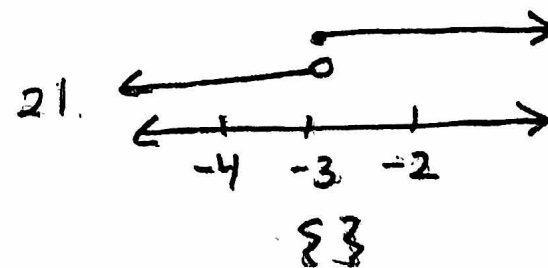
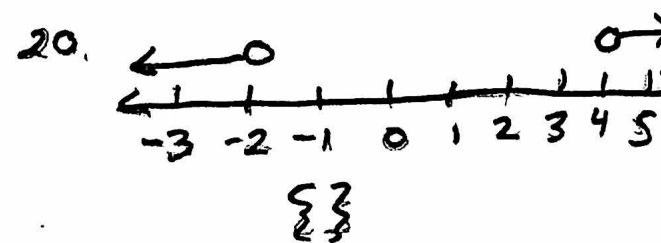
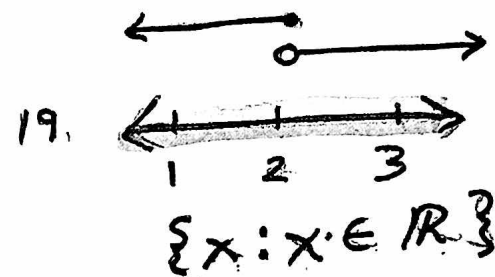
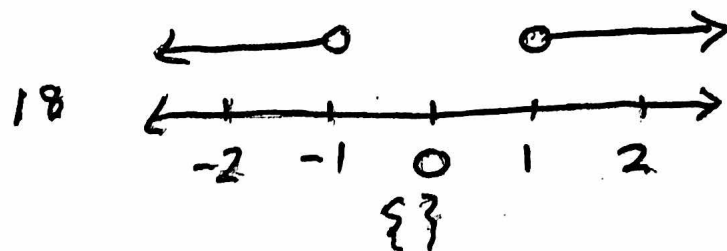
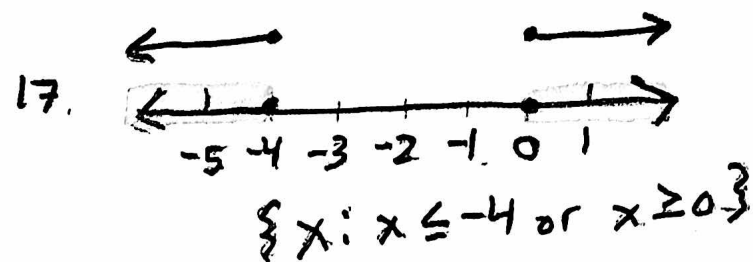
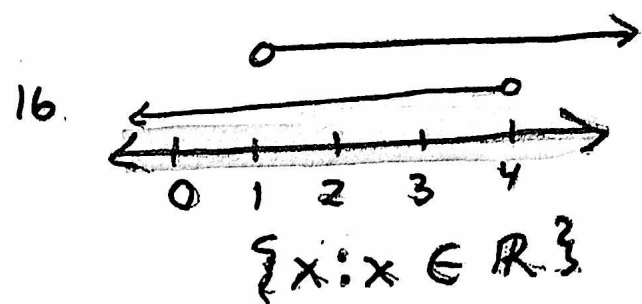
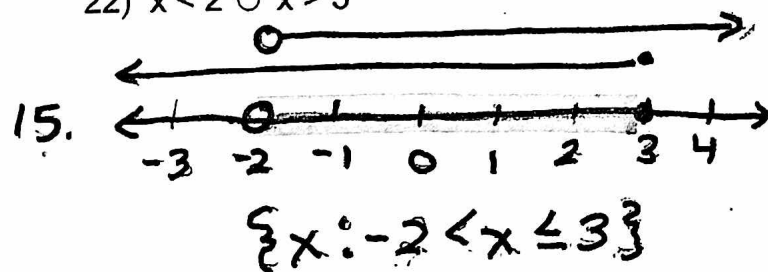
$$18) x < -1 \cap x > 1$$

$$19) x \leq 2 \cup x > 2$$

$$20) x > 4 \cap x < -2$$

$$21) x \geq -3 \cap x < -3$$

$$22) x < 2 \cup x > 5$$



13.3 Writing Equations of Lines and Graphing Lines

Write an equation, in Standard Form, for the line that:

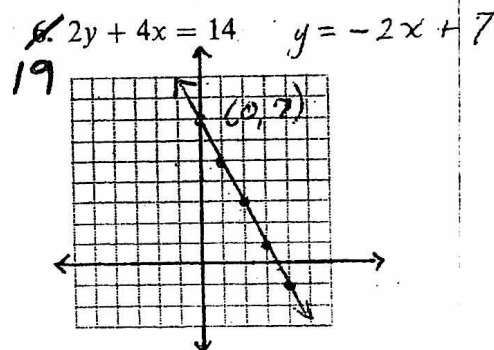
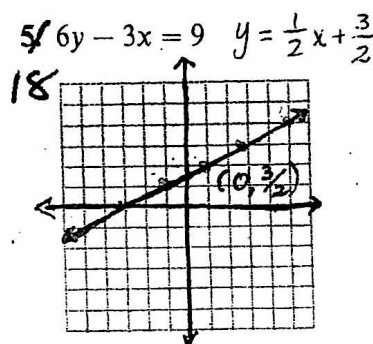
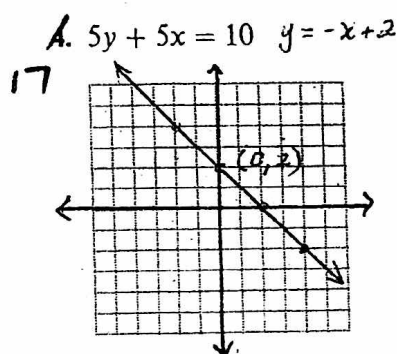
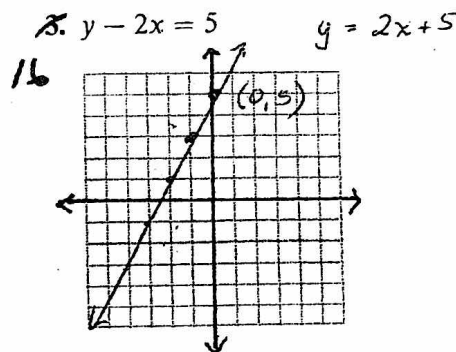
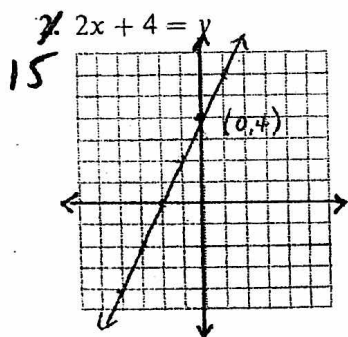
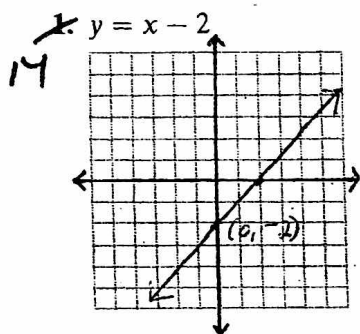
1. passes through the points (2, -6) and (-3, 4) $2x + y = -2$
2. passes through the point (4, 6) and is perpendicular to the line $3x + 4y = 6$ $4x - 3y = -2$
3. has slope $-\frac{2}{3}$ and passes through the point (6, -4) $2x + 3y = 0$
4. passes through the origin and is perpendicular to the line $x - 3y = -9$ $3x + y = 0$
5. has y-intercept 4 and slope $-\frac{2}{7}$ $2x + 7y = 28$
6. is parallel to the line $-2x + y = 6$ and passes through the point (-3, 8) $2x - y = -14$
7. is perpendicular to the line through the points (2, -3) and (6, 4) and has the same y-intercept as the line $3x - 4y = 24$ $4x + 7y = -42$
8. passes through the points (6, -8) and (-4, 3) $11x + 10y = -14$
9. has $m = -\frac{3}{5}$ and $b = 6$ $3x + 5y = 30$
10. is parallel to the line $-3x + y = 10$ and with y-intercept 7 $3x - y = -7$ $x + 4y = -16$
↑
11. is perpendicular to the line $-4x + y = -6$ and has the same y-intercept as the line $2x - y = 4$
12. passes through the point (-2, 6) is parallel to the line $5x - 4y = 20$ $5x - 4y = -34$
13. is the perpendicular bisector of the segment connecting the points (8, 4) and (14, 10) $x + y = 18$

§13.3

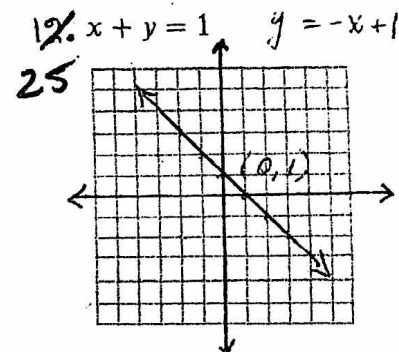
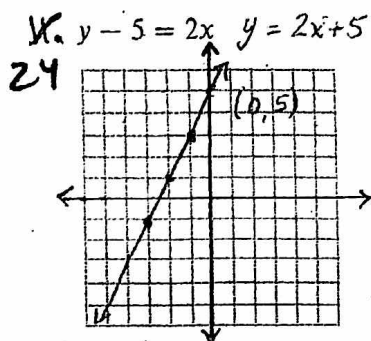
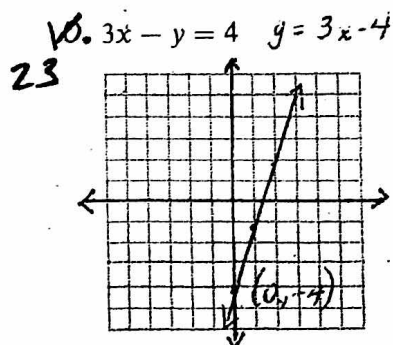
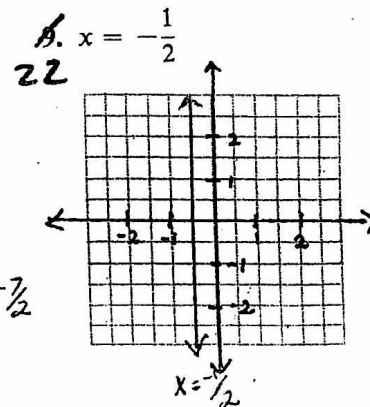
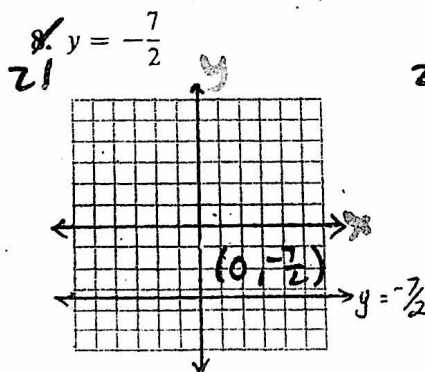
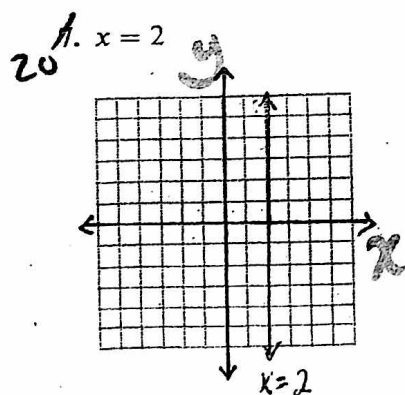
graphs

Graphing Lines

Graph



Graph.



Section 13.4. Systems of eqns

- | | | |
|---------------------------------------|----------------------------------|---|
| 1) $(3, 2)$ | 2) $(7, -1)$ | 3) $(1, 0)$ |
| 4) $(-4, 8)$ | 5) $(8, -2)$ | 6) $(-4, -11)$ |
| 7) $(3, -2)$ | 9) $(5, -2)$ | 10) $(0, 4)$ |
| 13) $(4, -1)$ | 15) $5, 9$ | 17) $8.2, 49.2$
$17, 39$ |
| 19) $(-5, \frac{3}{2})$ | 21) $\{ 3$ | 23) $\{ x, y : 4x - 10y = 18$ |
| 25) $(\frac{29}{31}, -\frac{26}{31})$ | 27) $(\frac{5}{8}, \frac{1}{4})$ | |

8) $(3, 1)$

22) $(-\frac{1}{2}, \frac{1}{6})$

10) $(-3, 4)$

24) $(\frac{3}{5}, -5)$

12) $(2, 6)$

26) NO solution

14) $(5, -4)$

16) 8.2 and 49.2

18) 20 dimes + 50 quarters

20) $\{ (x, y) \mid (\frac{3}{2}y + 3, y) \}$

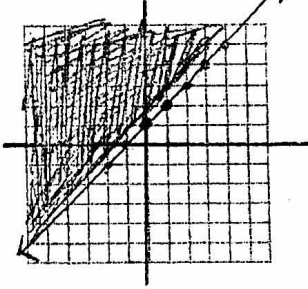
$\{ (x, y) \mid (x, \frac{2}{3}x - 2) \}$

Graphing Inequalities

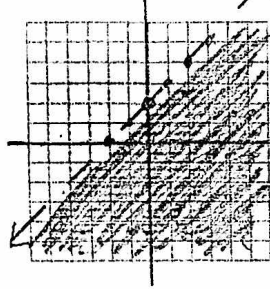
Section 13.5

Graph each inequality.

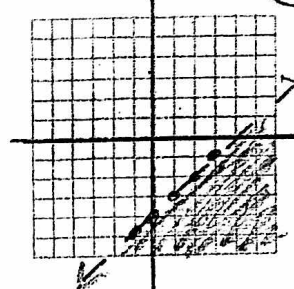
1. $y \geq x + 1$



2. $y < x + 2$



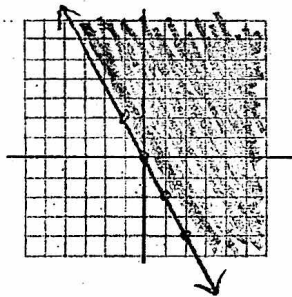
3. $x - y > 4$



$-y > -x + 4$
 $y < x - 4$

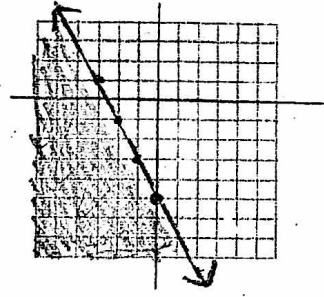
4. $4x + 2y \geq 0$

$2y \geq -4x$
 $y \geq -2x$



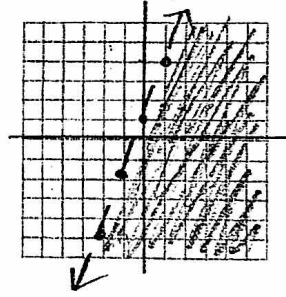
5. $2x + y \leq -5$

$y \leq -2x - 5$



6. $3x - y > -1$

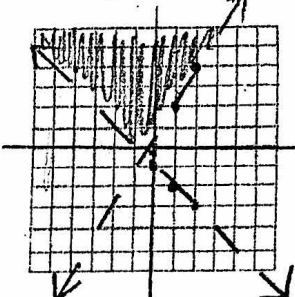
$-y > -3x - 1$
 $y < 3x + 1$



Solve these systems by graphing.

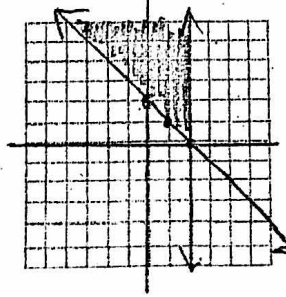
7. $y > 2x$

$x + y > -1$ $y > -x - 1$



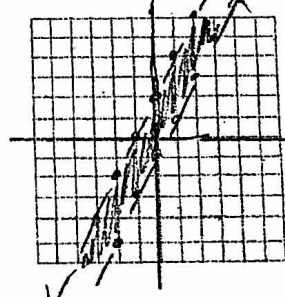
8. $x + y \geq 2$ $y \geq -x + 2$

$x \leq 2$



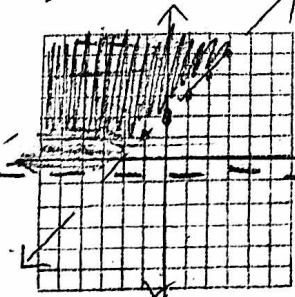
9. $y - 2x > -1$ $y > 2x - 1$

$y - 2x < 2$ $y < 2x + 2$



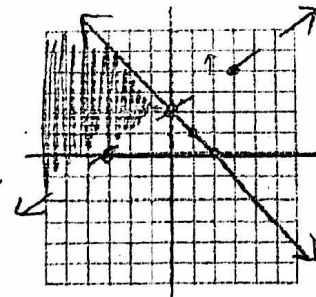
10. $y > -\frac{1}{2}$

$y > x + 2$



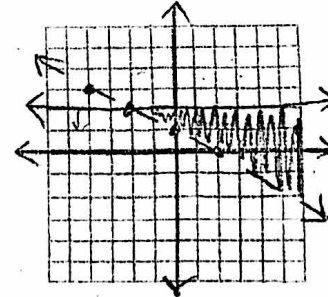
11. $3y - 2x > 6$ $y > \frac{2}{3}x + 2$

$x + y \leq 2$ $y \leq -x + 2$



12. $2y + x > 2$ $y > -\frac{1}{2}x + 1$

$3y \leq 6$ $y \leq 2$



Geometry
Chapter 13 Important Skills for Algebra 2

13.6 Radicals

Simplify.

- | | | | |
|-------------------------------|-----------------------------|---------------------|-------------------------------|
| 1. $\sqrt{64}$ 8 | 2. $-\sqrt{144}$ -12 | 3. $\sqrt{625}$ 25 | 4. $-\sqrt{256}$ -16 |
| 5. $-\sqrt{100}$ -10 | 6. $\sqrt{49}$ 7 | 7. $-\sqrt{1}$ -1 | 8. $\sqrt{1}$ 1 |
| 9. $\sqrt{48}$ $4\sqrt{3}$ | 10. $\sqrt{10}$ $\sqrt{10}$ | 11. $\sqrt{36}$ 6 | 12. $\sqrt{144}$ 12 |
| 13. $\sqrt{120}$ $2\sqrt{30}$ | 14. $\sqrt{169}$ 13 | 15. $\sqrt{400}$ 20 | 16. $\sqrt{200}$ $10\sqrt{2}$ |

Simplify.

- | | | |
|---|-------------------------------------|------------------------------------|
| 25. $\sqrt{a^3b^3c^3}$ abc | 26. $\sqrt{(x-2)^2}$ $x-2$ | 27. $\sqrt{(9m)^2}$ $9m$ |
| 28. $\sqrt{(x+1)^2}$ $x+1$ | 29. $\sqrt[3]{8x^3} = 2x$ | 30. $\sqrt[4]{81x^4}$ |
| 31. $\sqrt[3]{x^6y^{12}z^{15}}$ $x^2y^4z^5$ | 32. $\sqrt[4]{x^{20}y^4z^8q^{12}}$ | |
| 33. $\sqrt{27}$ $3\sqrt{3}$ | 34. $\sqrt{128}$ | 35. $\sqrt[3]{80}$ $2\sqrt[3]{10}$ |
| 36. $\sqrt{16i}$ | 37. $\sqrt[4]{64y}$ $2\sqrt[4]{4y}$ | 38. $\sqrt{15y^2}$ |
| 39. $\sqrt{12a^3}$ $2a\sqrt{3}$ | 40. $\sqrt{400y^2}$ | 41. $\sqrt{31y^2}$ $y\sqrt{31}$ |
| 42. $\sqrt{250b}$ | 43. $\sqrt{180}$ $6\sqrt{5}$ | 44. $\sqrt{18a^3b^3}$ |
| 45. $\sqrt{165}$ $\sqrt{165}$ | 46. $\sqrt{1000}$ | 47. $\sqrt{75x}$ $5\sqrt{3x}$ |
| 48. $\sqrt{44m^2}$ | 49. $\sqrt{50a}$ $5\sqrt{2a}$ | 50. $\sqrt{60c^2}$ |
| 51. $\sqrt{200x}$ $10\sqrt{2x}$ | 52. $\sqrt{90x^2}$ | 53. $\sqrt[3]{y^{24}}$ y^8 |
| 54. $\sqrt[4]{32m^{13}}$ | 55. $3x^2\sqrt[3]{2xy^2}$ | 56. $\sqrt[3]{125x^3y^3}$ |
| 57. $\sqrt{y^{41}}$ $y^5\sqrt{y}$ | 58. $\sqrt{(a+b)^3}$ | 59. $\sqrt{64m^3}$ $8m\sqrt{m}$ |
| 60. $\sqrt{27a^3b^3}$ | 61. | 62. $\sqrt[4]{x^3y^{12}}$ |

$$2(x+4)^4\sqrt{3x+12}$$

Pg 6

$$34. 8\sqrt{2}$$

$$36. 4\sqrt{t}$$

$$38. y\sqrt{15}$$

$$40. 20y$$

$$42. 5\sqrt{10b}$$

$$44. 3ab\sqrt{2}$$

$$46. 10\sqrt{10}$$

$$48. 2m\sqrt{11}$$

$$50. 2c\sqrt{15}$$

$$52. 3x\sqrt{10}$$

$$54. 2m^3\sqrt[4]{2m}$$

$$56. 5x\sqrt[3]{x^2y^2}$$

$$58. (a+b)^2\sqrt{a+b}$$

$$60. 3ab\sqrt{3ab}$$

$$62. xy^3\sqrt[4]{x^3}$$

13.6 $\sqrt{\quad}$ pg 7

1) $\sqrt{55}$

2) $4\sqrt{14}$

3) $\sqrt{5a}$

4) $\sqrt{6x+15}$

5) $\sqrt{x^2+2x}$

6) $\frac{\sqrt{6}}{2}$

7) $\sqrt{9-a^2}$

8) $\sqrt{x^2+x-12}$

9) $\sqrt{2x^2+5x+3}$

10) $3\sqrt{7}$

11) $2\sqrt{42}$

12) $5xy\sqrt{2x}$

13) $6\sqrt{5ab}$

14) $3x\sqrt{15}$

15) $3x^2\sqrt{2}$

16) $3a\sqrt{5}$

17) $2\sqrt{ab}$

18) $12m^2n\sqrt{mn}$

19) $\frac{1}{10}$

20) $\frac{3}{5}$

21) $\frac{5}{6}$

22) $-\frac{7}{8}$

23) $\frac{2}{9}$

24) $\frac{3}{4}$

25) $3x$

26) $\frac{8}{t}$

27) 2

28) 3

29) 6

30) $\frac{3}{5}$

31) 5

32) $6x^3$

33) $2x\sqrt{x}$

34) $2x\sqrt{3}$

35) $\frac{\sqrt{6}}{6}$

36) $\frac{\sqrt{21}}{7}$

37) $\frac{\sqrt{15}}{6}$

38) $\frac{\sqrt{14}}{6}$

39) $\frac{2\sqrt{15}}{5}$

40) $\frac{\sqrt{5x}}{x}$

41) $\frac{\sqrt{15x}}{5}$

42) $\frac{x\sqrt{7}}{14}$

43) $\frac{\sqrt{6}}{4}$

44) $\frac{\sqrt{30}}{10}$

45) $\frac{\sqrt{30}}{2}$

46) $\frac{y\sqrt{2y}}{4}$

47) $2\sqrt{x}$

48) $15\sqrt{3}$

49) $4\sqrt{3x} + 5x\sqrt{3x}$

50) $\sqrt{2}$

51) $\frac{5\sqrt{7}}{7}$

52) $6x\sqrt{y} - 8\sqrt{y}$

53) $7\sqrt{2}$
54) $\frac{\sqrt{3}}{2}$
55) $6\sqrt{x+2}$
56) $12\sqrt{6} - 6\sqrt{3}$
57) $12\sqrt{a}$
58) $2a^2\sqrt{ab} + 2ab\sqrt{ab}$

Ch 13 pg 8

Geo Hon Section 13.7
1-42 ans Factoring

1) $2(4a^2 + 5a - 8)$

2) $(a+5)(a-1)$

3) $(t-5)^2$

4) $(y+7)(y+3)$

5) $(8-5c)(8+5c)$

6) $(m+24)(m-1)$

7) $(c+7)^2$

8) $(n-7)(n-5)$

9) $y^2(y^3+9)$

10) $(y+1)^2$

11) $(a+6)(a-4)$

12) $a(a-4)^2$

13) $(2x+5)(x-9)$

14) $4(y-2)^2$

15) $(x+11)(x-11)$

16) $2ab(3ab^2-7c)$

17) $(y-9)(y-6)$

18) $(y-2)(y-8)$

19) $(2x+1)(x-2)$

20) $(a-5)(a+3)$

21) $(a+5)^2$

22) $(4-a)^2$

23) $(10a+3)(10a-3)$

24) $5(y+2)(y+3)$

25) $(3y-2)(y-6)$

26) $(m+3)^2$

27) $3c(c^3-2c-5)$

28) $c(4c-3)(4c+3)$

29) $(3a-1)(a-3)$

30) $(x+7)(x-6)$

31) $2(y-4)(y-1)$

32) $(n-10)^2$

33) $(x+7)(x-7)$

34) $5(x^2-3)$

35) $(t-4)(t-3)$

36) $(x+5)(x-3)$

37) $(5m+3)^2$

38) $(t+3)(t+5)$

39) $(x+8)^2$

40) $2(x+7)(x-6)$

41) $(8+5c)(8-5c)$

42) $(x+7)(x+2)$

Section 13.7 Factoring

$$43) (x^2 + 2)(x - 2)$$

$$45) 5(2x - 8)(4x + 3)$$

$$47) 2n(2m^4n - 3)$$

$$49) (y + 1)(y - 1)(y + 3)$$

$$51) (6n - 1)(n + 2)$$

$$53) (a^2 + 2)(a^2 + 2)$$

$$55) (5x + 7)(2x - 3)$$

$$57) x^4(x + 3)(x - 3)$$

$$59) (n^2 + 2)(n - 2)$$

$$61) (4a + 5)(2a + 3)$$

$$63) (m + 2)(m + 3)$$

$$65) 4y(2y + 3)(2y + 3)$$

$$67) 4(5 + 3n)(5 - 3n)$$

$$69) (7x - 2)^2 \text{ or } (2 - 7x)^2$$

$$44) 2(x - 5)(x - 1)$$

$$46) y^2(y^3 - 2)(y^3 + 2)$$

$$48) (3a + 20)(3a - 20)$$

$$50) (y^2 + 1)(2 + y)$$

$$52) 10(t - 1)(t - 1)$$

$$54) (a + 3)(a - 1)$$

$$56) c(c + 8)(c + 8)$$

$$58) 5(m + 2)(m - 2)$$

$$60) (c + 3)(c + 3)(c - 3)$$

$$62) x(x + 3)^2$$

$$64) (t + 2)(t^2 - 7)$$

$$66) x^2(x^6 - 5)$$

$$68) (a + 7)(4a^2 + 1)$$

§13.8

(28) $x = -9$ or $x = 1$

(29) $x = \frac{2}{3}$ or $x = \frac{3}{2}$

(30) $x = \frac{1 \pm \sqrt{31}}{5}$

(1) $x = -7$ or $x = 5$

(2) $x =$

(3) $x = \frac{3}{2}$ or $x = 4$

(4) $x = 0$ or $x = 5$

(5) $x = \frac{3 \pm \sqrt{29}}{2}$

(6) $x = \pm \sqrt{5}$

(7) $x = -\frac{5}{3}$ or $x = 2$

(8) $x = -\frac{5}{2}$ or $x = 0$

(9) $x = -4 \pm \sqrt{15}$

(10) $x = \pm \frac{\sqrt{21}}{7}$

(11) $x = -9$ or $x = 4$

(12) $x = -3$ or $x = \frac{7}{2}$

(13) $x = -4 \pm \sqrt{5}$

(14) $x = -5 \pm \sqrt{33}$

(15) $x = 0$ or $x = \frac{5}{4}$

(16) $x = 3$ or $x = 8$

(17) $x = \pm \frac{3\sqrt{2}}{2}$

(18) $x = \frac{1}{4}$ or $x = 1$

(19) $x = -9$ or $x = 5$

(20) $x = \frac{5 \pm \sqrt{7}}{2}$

(21) $x = -5$ or $x = \frac{1}{2}$

(22) $x = \frac{3 \pm \sqrt{17}}{2}$

(23) $x = \pm 2\sqrt{3}$

(24) $x = 0$

(25) $x = \frac{-6 \pm 2\sqrt{3}}{3}$

(26) $x = -2$ or $x = 6$

(27) $x = \pm 7$

13.9 Completing $\square$

1) $x^2 + y^2 = 9$ $c(0,0)$ $r=3$

2) $x^2 + (y-4)^2 = 25$ $c(0,4)$ $r=5$

3) $(x-2)^2 + y^2 = 4$ $c(2,0)$ $r=2$

4) $(x-3)^2 + (y+4)^2 = 25$ $c(3,-4)$ $r=5$

5) $(x+7)^2 + (y+3)^2 = 36$ $c(-7,-3)$ $r=6$

6) $(x+1)^2 + (y-2)^2 = 9$ $c(-1,2)$ $r=3$

7) $(x+5)^2 + (y-6)^2 = 51$ $c(-5,6)$ $r=\sqrt{51}$

8) $x^2 + (y+3)^2 = 9$ $c(0,-3)$ $r=3$

9) $(x+3)^2 + (y+1)^2 = 4$ $c(-3,-1)$ $r=2$

10) $(x-4)^2 + (y+7)^2 = 100$ $c(4,-7)$ $r=10$

11) $(x+\frac{1}{2})^2 + (y-\frac{3}{2})^2 = 4$ $c(-\frac{1}{2},\frac{3}{2})$ $r=2$

12) $(x-2)^2 + (y-\frac{3}{2})^2 = 1$ $c(2,\frac{3}{2})$ $r=1$

13.10 Solving Absolute Value Equations and Inequalities

Solve

1) $|x + 5| = 16$ $\{-21, 11\}$

2) $|5m + 1| = 13$ $\{-\frac{14}{5}, \frac{12}{5}\}$

3) $|2x - 1| = 5$ $\{-2, 3\}$

4) $|x + 1| = -3$ $\emptyset$

5) $|3x + 2| = 14$ $\{-\frac{16}{3}, 4\}$

6) $|2x + 14| = 8$ $\{-11, -3\}$

Graph on a number line.

7) $|y| \geq 2$

8) $|y| \leq 5$

9) $|x| < 3$

10) $|c| > 4$

Solve. State answer in set notation. Graph on a number line.

11) $|y + 4| > 2$ $\{y | y < -6 \text{ or } y > -2\}$

12) $|2x + 6| \leq 8$ $\{x | -7 \leq x \leq 1\}$

13) $|4y - 1| < 11$ $\{y | -\frac{5}{2} < y < 3\}$

14) $|4m - 3| > 9$ $\{m | m < -\frac{3}{2} \text{ or } m > 3\}$

15) $|2y + 6| \geq 8$ $\{y | y \leq -7 \text{ or } y \geq 1\}$

16) $|x + 2| < 3$ $\{x | -5 < x < 1\}$

11)

12)

13)

14)

15)

16)