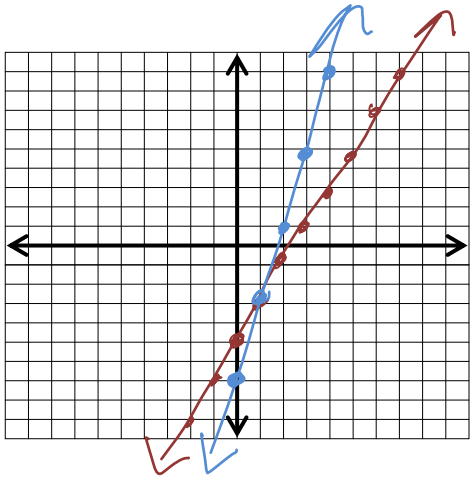
Review Chpt 1B and 3 (Intersections)
SHOW ALL WORK!!!

Solve by graphing.

1) $y = 4x - 7$
$-2x + y = -5$

$y = 2x - 5$

$(1, -3)$



Solve using substitution or elimination. You MUST show your work!

2. $3x + 2y = 6$
$-6x - 3y = -6$

$6x + 4y = 12$
$-6x - 3y = -6$
$y = 6$

$3x + 2(6) = 6$
$3x + 12 = 6$
$3x = -6$
$x = -2$

2. $(-2, 6)$

3. $4x - 5y = -3$
$x = 2y - 3$

$4(2y - 3) - 5y = -3$
$8y - 12 - 5y = -3$
$3y = 9$
$y = 3$

$x = 2(3) - 3$
$x = 6 - 3$
$x = 3$

3. $(3, 3)$

4. $2x - 5y = 10$
$-3x + 4y = -15$

$6x - 15y = 30$
$-6x + 8y = -30$
$-7y = 0$
$y = 0$

$2x - 5(0) = 10$
$2x = 10$
$x = 5$

4. $(5, 0)$

5. $6x - y = -2$
$-18x + 3y = 4$

$y = 6x + 2$

$-18x + 3(6x + 2) = 4$
$-18x + 18x + 6 = 4$
$6 = 4$
False

5. No Solution

Solve using your calculator.

6. $y = 2(x-4)^2$
$y - 2x = 4$ → $y = 2x + 4$

6. (2, 8) (7, 18)

7. $y = x^3 + 2$
$y = \frac{3}{2}x - 3$

7. (−2, −6)

Use your calculator to solve the equation.

8. $x^2 + 3x - 5 = 2^x - 1$

8. {−4.01, 1.52, 5.34}

9. $|x + 2| - 3 = \frac{3}{2}x + 4$

9. {−3.6}

Solve for each variable.

10. $2x + 4y - 5z = -8$
$4x = 12$ → $x = 3$
$5x + 8y - 5z = -3$

$6 + 4y - 5z = -8$ → $-4y + 5z = 14$
$15 + 8y - 5z = -3$ → $8y - 5z = -18$
$4y = -4$
$y = -1$

$5(3) + 8(-1) - 5z = -3$
$15 - 8 - 5z = -3$
$-5z = -10$
$z = 2$

10. (3, −1, 2)

11. $2x + y + z = 1$
$x + 3y - z = -11$
$5x - 2y + 3z = 21$

$2x + y + z = 1$
$x + 3y - z = -11$
$3x + 4y = -10$

$3x + 9y - 3z = -33$
$5x - 2y + 3z = 21$
$8x + 7y = -12$

$-24x - 32y = 80$
$24x + 21y = -36$
$-11y = 44$
$y = -4$

$3x + 4(-4) = -10$
$3x = 6$
$x = 2$

$2(2) + -4 + z = 1$
$z = 1$

11. (2, −4, 1)

Solve each equation by hand. Be sure to show your work.

12. $y = x^2 - 6x + 10$
$x + y = 6$ $\longrightarrow y = -x + 6$

$x + x^2 - 6x + 10 = 6$
$x^2 - 5x + 4 = 0$
$(x-4)(x-1) = 0$
$x - 4 = 0$ $\quad x - 1 = 0$
$x = 4$ $\quad x = 1$
$y = -4 + 6$ $\quad y = -1 + 6$
$y = 2$ $\quad y = 5$

12. $(1, 5)(4, 2)$

13. $x^2 + y^2 = 25$
$y = x + 7$

$x^2 + (x+7)^2 = 25$
$x^2 + x^2 + 14x + 49 = 25$
$2x^2 + 14x + 24 = 0$
$2(x^2 + 7x + 12) = 0$
$2(x+4)(x+3) = 0$
$x + 4 = 0$ $\quad x + 3 = 0$
$x = -4$ $\quad x = -3$
$y = -4 + 7$ $\quad y = -3 + 7$
$y = 3$ $\quad y = 4$

13. $(-4, 3)(-3, 4)$

Solve each equation either by hand or by graphing on calculator.

14. $7|4x - 1| = 21$
Y_1 $\quad Y_2$
$x = -0.5$
$x = 1$

15. $|2x + 5| - 8 = 9$
Y_1 $\quad Y_2$
$x = 6$
$x = -11$

16. $|3x - 2| \geq x + 6$
above
$x \leq -1$ OR $x \geq 4$

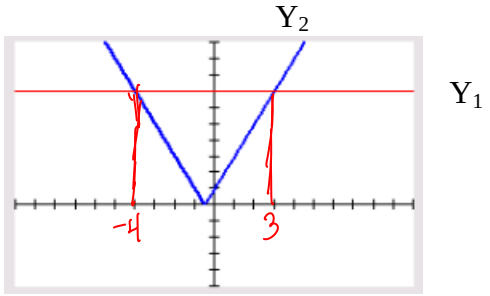
17. $|3x + 7| < -1$
below
No Solution

18. $3|2x - 5| \leq 27$
below
$-2 \leq x \leq 7$

19. $|4x + 5| + 10 > 8$
above
Infinitely Many

Use the graphs below to solve.

20)

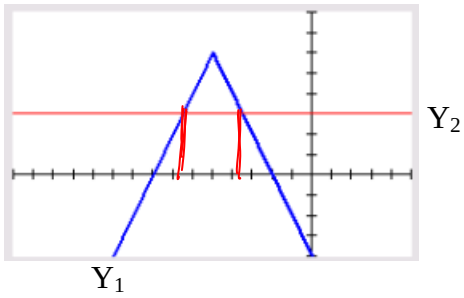


line below ↑↓

20) $Y_1 < Y_2$ $-4 < X < 3$

$Y_2 > Y_1$ $X < -4$ or $X > 3$

21)



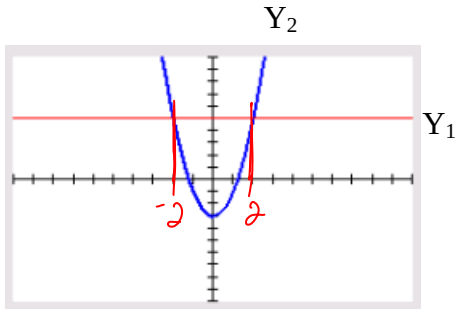
↑↓ below line

21) $Y_1 \leq Y_2$ $X \leq -6.5$ OR $X \geq -3.5$

$Y_1 \geq Y_2$ $-6.5 \leq X \leq -3.5$

↑↓ above

22)



line below ↑↓

22) $Y_1 < Y_2$ $X < -2$ or $X > 2$

$Y_2 > Y_1$ $-2 \leq X \leq 2$