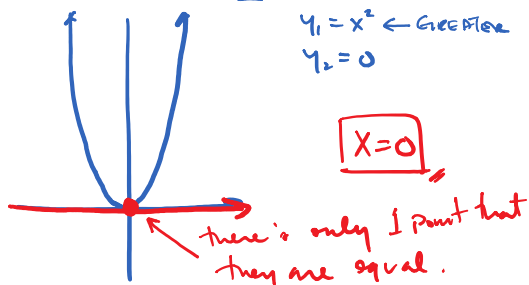


Pre Calculus 11  
HW 9.2 Quadratic Inequalities

Name \_\_\_\_\_

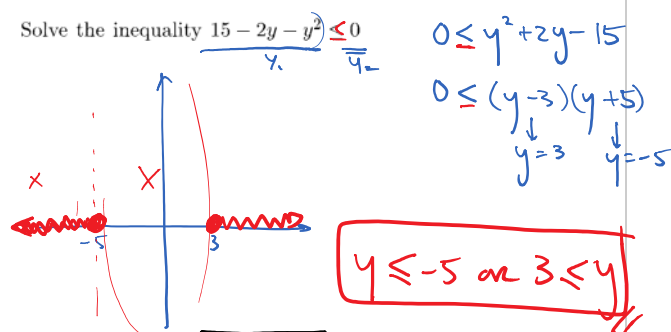
Date \_\_\_\_\_

1. Solve the inequality  $x^2 \leq 0$

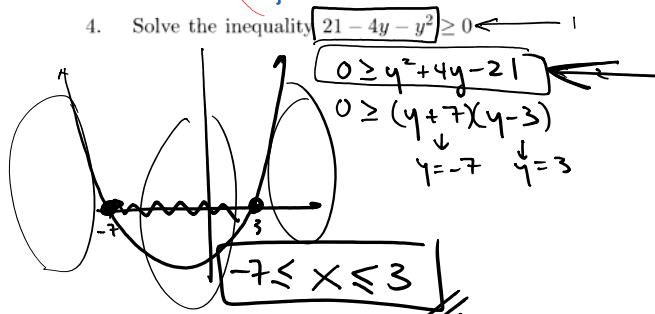


3. Solve the inequality  $-4 + 5y - y^2 > 0$

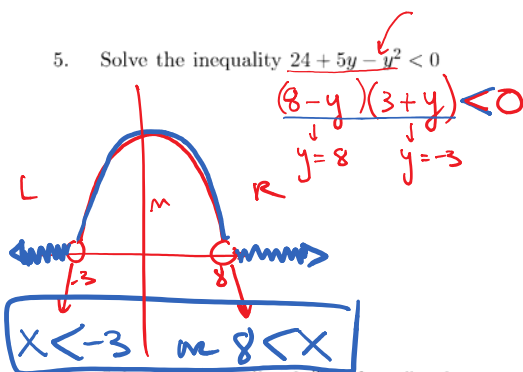
2. Solve the inequality  $15 - 2y - y^2 \leq 0$



4. Solve the inequality  $21 - 4y - y^2 \geq 0$



5. Solve the inequality  $24 + 5y - y^2 < 0$



7. Solve the inequality  $6x^2 - 13x - 5 > 0$

6. Solve the inequality  $8x^2 + 14x - 15 < 0$

8. Solve the inequality  $20x - 4x^2 - 25 \geq 0$

9. Solve the inequality  $25x^2 + 10x + 1 > 0$

$$a=25 \quad b=10 \quad c=1$$

$$x = \frac{-10 \pm \sqrt{100 - 4(25)(1)}}{2 \cdot 25}$$

$$x = \frac{-10 \pm 0}{50} = -\frac{1}{5}$$

$$x \in \mathbb{R}; x \neq -\frac{1}{5} \quad x < -\frac{1}{5} \text{ or } -\frac{1}{5} < x$$

10. Solve the inequality  $-12x + 4x^2 + 9 < 0$

Solve.

11.  $(x-3)(2x+3) < -(3x+1)(3x+2)$

12.  $c(c+3) < c^2 + 4c + 6$

$$c^2 + 3c < c^2 + 4c + 6$$

$$3c < 4c + 6$$

$$0 < c + 6$$

$$-6 < c$$

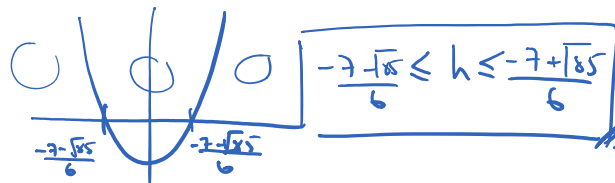
13.  $2a^2 + 11a - 15 \geq a(a-3) + 2$

14.  $5h(3h+5) - 2 \leq 6h(2h+3) + 1$

$$15h^2 + 25h - 2 \leq 12h^2 + 18h + 1$$

$$3h^2 + 7h - 3 \leq 0$$

$$h = \frac{-7 \pm \sqrt{49 + 4(3)(3)}}{6} = \frac{-7 \pm \sqrt{85}}{6}$$

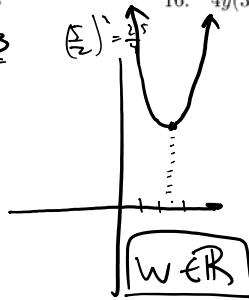


⊙ Don't intersect

15.  $6w(4w - 3) + 21 \geq 2w(10w + 1) - 13$

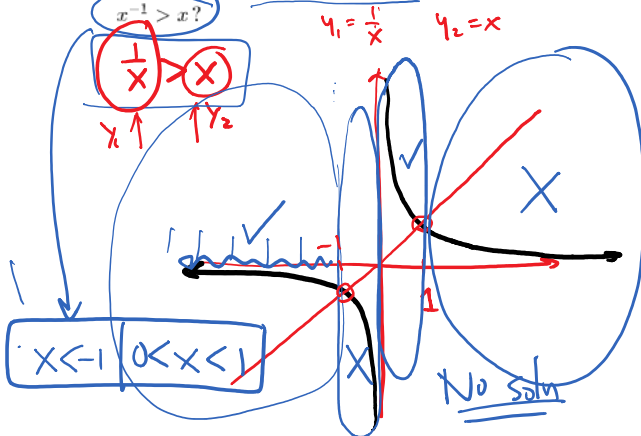
$$\begin{aligned} 24w^2 - 18w + 21 &\geq 20w^2 + 2w - 13 \\ 4w^2 - 20w + 34 &\geq 0 \\ 4(w^2 - 5w) + 34 &\geq 0 \\ 4(w^2 - 5w + \frac{25}{4}) - 25 + 34 &\geq 0 \\ 4(w - \frac{5}{2})^2 + 9 &\geq 0 \end{aligned}$$

16.  $4y(3y + 5) - 20 > 9y(y + 2) + 4$



17. For how many positive integer values of  $x$  is

$x^{-1} > x$ ?



18. Find the smallest whole number value of  $x$  that satisfies this inequality.

$5x - \frac{1}{3} > \frac{1}{5} + 3x$

19. For what value(s) of  $r$ , a real number, is the following statement true?

$3 - 2r(1 - r) > 6r - (2 - (7r + 2r^2))$

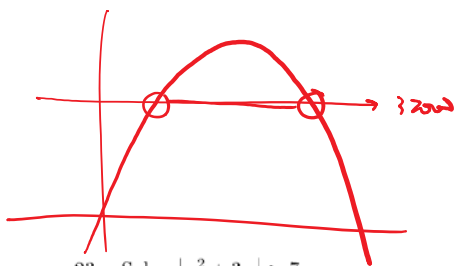
20. How many positive integers satisfy the inequality

$(x - 1)(x - 4) < 0$



21. A school club sold 1200 sweatshirts at \$25 each last year. This year the club estimates that for each \$2 increase in the price, it will sell 50 fewer sweatshirts. For what price of the sweatshirt will it generate a revenue greater than \$32,000?

$$R = \underline{\underline{(25 + 2x)}}(1200 - 50x) = 32000$$



23. Solve  $|x^2 + 3x| > 7$

22. A charter bus company provides a bus trip for a fare of \$100 each for 40 or fewer passengers. For each passenger in excess of 40, the fare is decreased \$2 per person for everyone. What number of passengers will produce a revenue greater than \$4400 for the bus company?

24. Solve  $|3x^2 - 1| < 4x + 5$