

Group:  $|2x + 1| - |x - 3| \geq 10$

## Review for Test 1

1. Write an equation of the perpendicular bisector of the segment joining (2,5) and (-3,1).

$$\text{mid} = \frac{2+(-3)}{2}, \frac{5+1}{2} = \left(\frac{-1}{2}, 3\right) \quad y = \frac{-5}{4}x + \frac{19}{8}$$

$$m = \frac{1-5}{-3-2} = \frac{-4}{-5} = \frac{4}{5} \quad \perp m = \frac{-5}{4}$$

$$y = mx + b \quad 3 = \frac{-5}{4} + b \quad \left. \begin{array}{l} 3 = \frac{-5}{4} + b \\ 3 - \frac{-5}{4} = b \end{array} \right\} \frac{17}{4} - \frac{5}{4} = b \quad \frac{12}{4} = b$$

2. Solve for x:  $(\sqrt{2x-5})^2 = (x-1)^2$

$$2x-5 = x^2 - 2x + 1$$

$$0 = x^2 - 4x + 6$$

$$x = \frac{4 \pm \sqrt{4^2 - 4(1)(6)}}{2(1)}$$

$$\frac{4 \pm \sqrt{16-24}}{2}$$

$$\frac{4 \pm \sqrt{-8}}{2} \text{ no ans.}$$

3. Solve for x:  $3x^2 - 14x - 5 = 0$

4. Solve for x:  $\left(\frac{x}{x-2} - \frac{3}{x+2} = 1\right)$   $(x+2)(y-2)$

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

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

$$-x + 6 = -4 \quad x \neq 2; -2$$

$$-x = -10$$

$$x = 10$$

5. Solve for x:  $5x^3 + 10x^2 < 0$

6.  $|2x + 1| - |x - 3| < 4$