

Name _____

Key

Show all your work on this paper. Solutions without correct supporting work will not be accepted. All answers must be exact.

Solve. When appropriate your answer must be in interval notation.

1. $\frac{x^2 - 36}{2} - \frac{x - 6}{1} = \frac{x + 6}{1}$

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

$2 - x - 6 = x - 6$

$2 = 2x$

$x = 1$

2. $\sqrt{2x + 7} - \sqrt{x + 3} = 1$

$\sqrt{2x + 7} = \sqrt{x + 3} + 1$

$2x + 7 = x + 3 + 2\sqrt{x + 3} + 1$

$x + 3 = 2\sqrt{x + 3}$

$x^2 + 6x + 9 = 4(x + 3)$

$x^2 + 2x - 3 = 0$

$(x + 3)(x - 1) = 0$

$x = -3, x = 1$

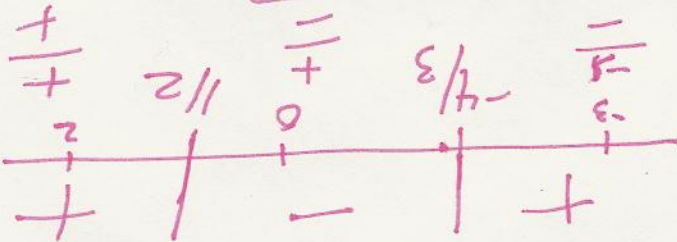
Check

$x = -3: \sqrt{1} - \sqrt{0} = 1 \checkmark$

$x = 1: \sqrt{9} - \sqrt{4} = 1 \checkmark$

3. $\frac{3x + 4}{2x - 1} \leq 0$

Zeros: Top: $x = -4/3$
 Bottom: $x = 1/2$



$$\left[\begin{array}{c} - \\ -\frac{4}{3} \\ 3 \\ 1 \\ 2 \end{array} \right]$$