

Practice Test

page 643: 1-21

We will work on this assignment throughout the period and stop as necessary for questions.

$x^2 - 2x - 3$
 \uparrow \uparrow \uparrow
 $a(1)$ $b(-2)$ $c(-3)$

$a \rightarrow +$
 opens up
 min.

$a \rightarrow -$
 opens down
 max.

Axis of symmetry } $-\frac{b}{2a}$
 Vertex }
 max/min }

$-\frac{(-2)}{2(1)} = \frac{2}{2} = 1$

$(1)^2 - 2(1) - 3$
 $1 - 2 - 3$
 -4

plug back in to find y value for max/min
 vertex = $(1, -4)$

$\text{Min} = -4$
 $D = (-\infty, \infty)$
 $R = [-4, \infty)$

$$\begin{array}{r} x^2 + 5x - 8 = 12 \\ + 8 \quad + 8 \\ \hline \end{array}$$

$$x^2 + 5x + \boxed{\frac{25}{4}} = 20 + \boxed{\frac{25}{4}}$$

$$\frac{b}{2} = \frac{5}{2}$$

$$\left(\frac{b}{2}\right)^2 = \frac{25}{4}$$

$$\sqrt{\left(x + \frac{5}{2}\right)^2} = \sqrt{\frac{105}{4}} = \frac{\sqrt{105}}{2}$$

$$x + \frac{5}{2} = \pm \frac{\sqrt{105}}{2}$$

$$x = \frac{-5 \pm \sqrt{105}}{2}$$

$$\frac{105}{5 \cdot 21}$$

$$\frac{20 \cdot 4}{1 \cdot 4} = \frac{80}{4}$$

$$\frac{80}{4} + \frac{25}{4}$$