

p. 352: 21, 24, 25, 28, 29, 32, 33,
36-40 (a)

$$\textcircled{21} \quad x \leq -2 \text{ or } x > 5$$

$$\textcircled{24} \quad x \geq -2 \text{ or } x > 0$$

$$\textcircled{25} \quad x < -6 \text{ or } x \geq -2$$

$$\textcircled{28} \quad x \geq -5 \text{ or } x < -16$$

$$\textcircled{29} \quad x < 10 \text{ or } x > 12; \text{ solution}$$

$$\textcircled{32} \quad x < -7 \text{ or } x \geq 2; \text{ solution}$$

$$\textcircled{33} \quad x < -2 \text{ or } x \geq 4$$

$$\textcircled{36} \quad x > 7 \text{ or } x < 8$$

$$\textcircled{37} \quad x < -2 \text{ or } x \geq 1$$

$$\textcircled{38} \quad x > 3 \text{ or } x \leq 1$$

$$\textcircled{39} \quad x < -8 \text{ or } x \geq -2$$

$$\textcircled{40} \quad x \geq 3 \text{ or } x < -3$$

6.6. Solving

Dec. 18, 2006

Absolute-Value Equations

Review: **Distance from Zero!**

$$|5| = 5 \quad |-10| = 10$$

$$|x| = 7 \quad x = 7 \text{ or } x = -7$$

$$|ax+b| = c$$

where $a, b, +c$ are
#s & x is the
Variable

$$ax+b=c \text{ or } ax+b=-c$$

$$*|y| = -22 \quad \text{No Solutions}$$

$$\underline{|x-2|} = \underline{5}$$
$$\begin{array}{ccc} x-2 = 5 & \text{or} & x-2 = -5 \\ \hline +2 & \downarrow & +2 \\ +2 & \text{or} & +2 \\ \hline x=7 & & x=-3 \end{array}$$

Check: $|7-2| \stackrel{?}{=} 5$ or $|-3-2| \stackrel{?}{=} 5$

$$\begin{array}{ccc} |5| \stackrel{?}{=} 5 & & |-5| \stackrel{?}{=} 5 \\ 5=5 \checkmark & & 5=5 \checkmark \end{array}$$

$$|2x - 7| - 5 = 4$$

$$\hline |2x - 7| = 9$$

|| are the same as any grouping symbols & act as their own variables

$$2x - 7 = 9$$

$$\hline 2x = 16$$

$$\frac{2x}{2} = \frac{16}{2}$$

$$x = 8$$

or

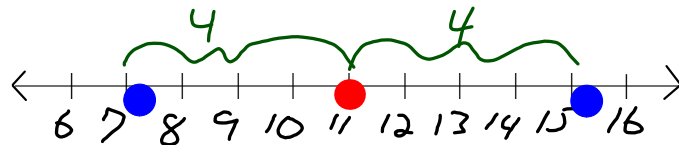
$$2x - 7 = -9$$

$$\hline 2x = -2$$

$$\frac{2x}{2} = \frac{-2}{2}$$

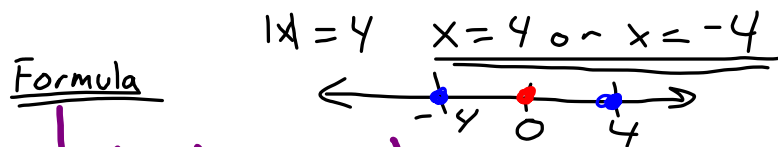
$$x = -1$$

Write an absolute-value eqn.
 that has 7 & 15 as its
1st Graph Solutions



2nd find the Midpoint (Average)

3rd find the distance



$$|x - \text{Midpoint}| = \text{Distance}$$

$$\underline{\underline{|x - 11| = 4}}$$

Write an abs-value equ.

w/ 10 + 15 as the solutions

Find Average to get Midpoint

$$\text{MidPt (Avg)} = \frac{(10+15)}{2} = \frac{25}{2} = 12.5$$

$$\text{Distance} = 2.5$$

$$|x - \text{MidPt}| = \text{Distance}$$

$$|x - 12.5| = 2.5$$



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O.T.L.

① pg 358-359: 10-12(a)

16, 20, 23, 24, 26, 27,
32, 36, 39, 40, 41,
42, 43, 47, 48