

1. Solve.

$$\frac{3}{3} \cdot \frac{x+1}{2} + \frac{2x-2}{3} = \frac{2}{3} \cdot \frac{2}{2}$$

$$6 \left(\frac{3x+3}{6} + \frac{2x-4}{6} = \frac{4}{6} \right) 6$$

$$3x+3+2x-4=4$$

$$5x-1=4$$

$$5x=5$$

$$x=1$$

2. Solve.

$$\frac{1}{2}(x+3) - \frac{3}{4}(x-2) = -2$$

$$\frac{2}{2} \cdot \frac{1x+3}{2} - \frac{3x}{4} + \frac{6}{4} = -\frac{2}{1} - \frac{4}{4}$$

$$4 \left(\frac{2x}{4} + \frac{6}{4} - \frac{3x}{4} + \frac{6}{4} = -\frac{8}{4} \right) 4$$

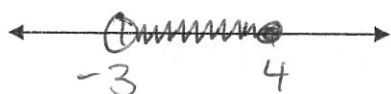
$$2x+6-3x+6=-8$$

$$-1x+12=-8$$

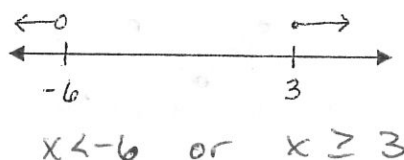
$$-1x=-20$$

$$x=20$$

3. Graph: $-3 < x \leq 4$



4. Write an inequality that represents the graph.



5. Solve. (See example 2 on p. 34)

Isolate 1st

$$2|2x-1|-3=13$$

$$+3+3$$

$$2|2x-1|=16$$

$$\frac{2}{2}$$

$$|2x-1|=8$$

Setup 2 Eqs

$$2x-1=8 \quad 2x-1=-8$$

$$2x-1=8$$

$$2x=9$$

$$x=4.5$$

$$2x-1=-8$$

$$2x=-7$$

$$x=-3.5$$

6. Solve. (See example 4 on p. 35.)

Test a point

$$|3x+2| > 14$$

$$3x+2=14 \quad 3x+2=-14$$

$$3x=12 \quad 3x=-16$$

$$x=4 \quad x=-5.3$$

Critical points

I $|3(-6)+2| > 14$
 $1-18+2 > 14$
 $16 > 14$ T

II $|3(0)+2| > 14$
 $10 > 14$ F

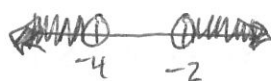
III $|3(5)+2| > 14$
 $17 > 14$ T

$x < -5.3$ or $x > 4$

7. Solve. (Use a number line to determine the solution.)

$$-3x > 12 \text{ and } \frac{1}{2}x > -1$$

$$x < -4 \text{ and } x > -2$$



No solution

8. What is the solution of

$$\frac{1}{2}x - 4 > 0 \text{ and } \frac{1}{2}x + 1 < 0$$

$$\frac{1}{2}x - 4 > 0$$

$$\frac{1}{2}x > 4$$

$$x > 8$$

AND

$$\frac{1}{2}x + 1 < 0$$

$$\frac{1}{2}x < -1$$

$$x < -2$$

a. all real numbers

b. $x > 8$

c. $-2 < x < 8$

d. empty set



1. State the vertex of

$$y = |x + 2| - 7$$

$$y = a |x - h| + k$$

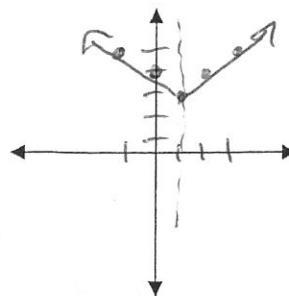
$$\text{vertex} = (h, k)$$

$$(-2, -7)$$

2. Make a T-chart and graph:

$$y = |x - 1| + 3$$

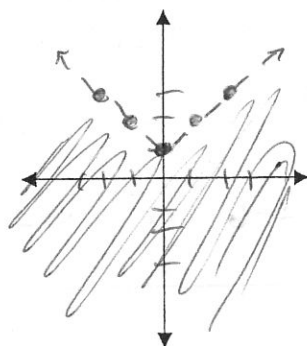
x	y
-1	5
0	4
1	3
2	4
3	5



3. Make a T-chart and graph:

$$y < |x| + 1$$

x	y
-2	3
-1	2
0	1
1	2
2	3



4. Write an equation for an absolute value function that translates 3 units to the right and 8 units up from the parent graph.

$$y = |x - 3| + 8$$

5. Write an equation of a line in slope-intercept form that has a slope of $\frac{1}{4}$ and contains $(-8, 3)$

$$x_1, y_1$$

$$y - y_1 = m(x - x_1)$$

$$y - 3 = \frac{1}{4}(x - (-8))$$

$$y - 3 = \frac{1}{4}(x + 8)$$

$$y - 3 = \frac{1}{4}x + 2$$

$$y = \frac{1}{4}x + 5$$

6. Write an equation of a line in slope-intercept form that contains $(5, 6)$ and $(4, 8)$.

$$x_1, y_1 \quad x_2, y_2$$

$$\frac{y_2 - y_1}{x_2 - x_1} = \frac{8 - 6}{4 - 5} = \frac{2}{-1} = -2$$

$$y_2 - y_1$$

$$y - y_1 = m(x - x_1)$$

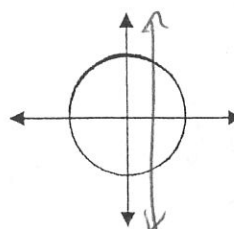
$$y - 6 = -2(x - 5)$$

$$y - 6 = -2x + 10$$

$$y = -2x + 16$$

7. If $m = 10$, then the parallel slope is 10 and the perpendicular slope is $-\frac{1}{10}$

8. Explain why or why not the graph is a function. Not a function because



a domain is paired with more than one range.