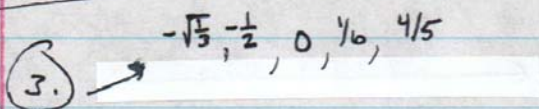
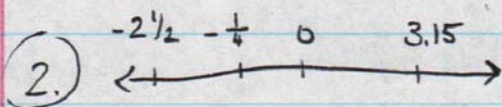
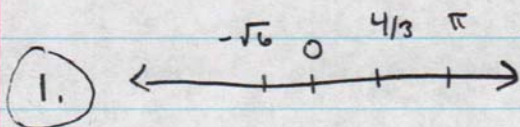


# Algebra 2 Chapter 1 Review



4.  $-\frac{9}{2}, -4, -\pi, -\frac{1}{3}, -\frac{1}{4}$

5.  $1\frac{5}{6} < 1.95$

6.  $\sqrt{8} < 2.9$

7.  $-2\frac{8}{9} < -2.75$

8.  $\sqrt{30} > 5.3$

9.  $8 \div 4 + (15 \div 3 - 2^2) \cdot 6$   
 $2 + (15 \div 3 - 4) \cdot 6$   
 $2 + (5 - 4) \cdot 6$   
 $2 + 1 \cdot 6$   
 $2 + 6$   
 $8$

10.  $6^2 - [9 + (7 - 5)^3] + 49 \div 7$   
 $36 - [9 + 2^3] + 7$   
 $36 - (9 + 8) + 7$   
 $36 - 17 + 7$   
 $26$

11.  $x^2 - 5x + 4 = 0 ; x = 4$   
 $(4)^2 - 5(4) + 4 \stackrel{?}{=} 0$   
 $16 - 20 + 4 \stackrel{?}{=} 0$   
 $-4 + 4 = 0$   
 $0 = 0$

True

12.  $y^3 - 7 = y - 1 ; y = 2$   
 $(2)^3 - 7 = 2 - 1$   
 $8 - 7 = 1$   
 $1 = 1$

True



$$(13) \quad 2b - 5b^2 + 1 = b^2 - 203 \quad ; \quad b = 6$$

$$2(6) - 5(6)^2 + 1 \stackrel{?}{=} 6^2 - 203$$

$$12 - 5(36) + 1 \stackrel{?}{=} 36 - 203$$

$$12 - 180 + 1 \stackrel{?}{=} -167$$

$$-167 = -167$$

True

$$(14) \quad 6z + z + 27 = 2z + 12 \quad ; \quad z = -3$$

$$6(-3) + (-3) + 27 = 2(-3) + 12$$

$$-18 - 3 + 27 = -6 + 12$$

$$-21 + 27 = 6$$

$$6 = 6$$

True

$$(15) \quad 12(2x - 4) + 5x - 20$$

$$24x - 48 + 5x - 20$$

$$29x - 68$$

$$(16) \quad 8n - 2 - 5n^2 + 9n + 14$$

$$-5n^2 + 17n + 12$$

$$(17) \quad -3x(2x - 3) - (x + 1)$$

$$-6x^2 + 9x - x - 1$$

$$-6x^2 + 8x - 1$$

$$(18) \quad 3p^2 + 6(p - 3) - 2$$

$$3p^2 + 6p - 18 - 2$$

$$3p^2 + 6p - 20$$

$$(19) \quad 6x - 3y = 9 \quad \text{solve for } y.$$

$$\begin{array}{r} -6x \\ -3y = \frac{-6x + 9}{-3} \end{array}$$

$$y = 2x - 3$$

$$(20) \quad 4c + 9d = 16 \quad \text{solve for } c$$

$$\begin{array}{r} -9d \\ 4c = \frac{-9d + 16}{4} \end{array}$$

$$c = -\frac{9}{4}d + 4$$

$$(21) \quad 5f - 6g = 14 \quad \text{solve for } f$$

$$\begin{array}{r} +6g \\ 5f = \frac{6g + 14}{5} \end{array}$$

$$f = \frac{6}{5}g + \frac{14}{5}$$



$$\begin{aligned} (22) \quad -3 + x &= -1 \\ +3 \quad \quad +3 \\ x &= 2 \end{aligned}$$

$$\begin{aligned} (23) \quad r + 6 &= 2 \\ -6 \quad \quad -6 \\ r &= -4 \end{aligned}$$

$$\begin{aligned} (24) \quad -4 \cdot \frac{m}{-4} &= 14 \cdot -4 \\ m &= -56 \end{aligned}$$

$$\begin{aligned} (25) \quad \frac{5}{8} \cdot \frac{8}{5} a &= -\frac{72}{13} \cdot \frac{5}{8} \\ a &= -\frac{360}{104} \end{aligned}$$

$$\begin{aligned} (26) \quad -11x + 4 &= 125 \\ -4 \quad \quad -4 \\ -11x &= 121 \\ -11 \quad \quad -11 \\ x &= -11 \end{aligned}$$

$$\begin{aligned} (27) \quad 6 - x &= -22 \\ -6 \quad \quad -6 \\ -x &= -28 \\ -1 \quad \quad -1 \\ x &= 28 \end{aligned}$$

$$\begin{aligned} (28) \quad -4x + 3 &= -5 \\ -3 \quad \quad -3 \\ -4x &= -8 \\ -4 \quad \quad -4 \\ x &= 2 \end{aligned}$$

$$\begin{aligned} (29) \quad \frac{2}{7}x + 8 &= 20 \\ -8 \quad \quad -8 \\ \frac{2}{7} \cdot \frac{7}{7}x &= 12 \cdot \frac{7}{7} \\ x &= 42 \end{aligned}$$

$$\begin{aligned} (30) \quad 7(x-20) &= x+4 \\ 7x - 140 &= x+4 \\ -x + 140 \quad \quad -x + 140 \\ 6x &= 144 \\ 6 \quad \quad 6 \\ x &= 24 \end{aligned}$$

$$\begin{aligned} (31) \quad 3(x-4) &= 5(x+6) \\ 3x - 12 &= 5x + 30 \\ -3x - 30 \quad \quad -3x - 30 \\ -42 &= 2x \\ 2 \quad \quad 2 \\ x &= -21 \end{aligned}$$

$$\begin{aligned} (32) \quad \frac{5}{2}x + \frac{1}{4} &= \frac{3}{4}x + 2 \\ 10x + 1 &= 3x + 8 \\ -3x - 1 \quad \quad -3x - 1 \end{aligned}$$

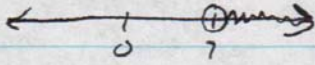
$$\frac{7x}{7} = \frac{7}{7}$$

$$x = 1$$



$$(33) \quad \frac{2x}{2} > \frac{14}{2}$$

$$x > 7$$

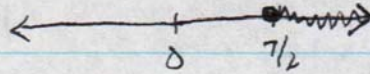


$$(34) \quad 4(2x-1) \geq 3(2x+1)$$

$$8x - 4 \geq 6x + 3$$

$$\frac{2x}{2} \geq \frac{7}{2}$$

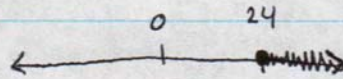
$$x \geq 7/2$$



$$(35) \quad 10 - \frac{3}{4}x \leq -8$$

$$-10 - \frac{3}{4}x \leq -18 \cdot \frac{4}{3}$$

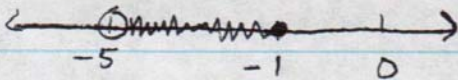
$$x \geq 24$$



$$(36) \quad 8 \leq 3 - 5x < 28$$

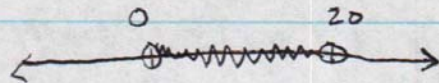
$$\frac{5}{-5} \leq \frac{-5x}{-5} < \frac{25}{-5}$$

$$-1 \geq x > -5$$



$$(37) \quad 0 < \frac{x}{5} < 4.5$$

$$0 < x < 20$$



$$(38) \quad 2x - 7 > -13 \quad \text{or} \quad \frac{1}{3}x + 5 \leq 1$$

$$\frac{2x}{2} > \frac{-6}{2}$$

$$x > -3$$

$$\frac{1}{3}x \leq -4$$

$$x \leq -12$$



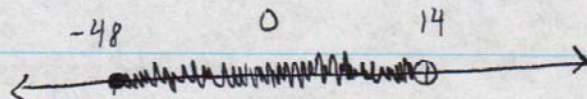
$$(39) \quad \frac{3}{4}x + 7 \geq -29 \quad \text{or} \quad 16 - x > 2$$

$$\frac{4}{3} \cdot \frac{3}{4}x \geq -36 \cdot \frac{4}{3}$$

$$x \geq -48$$

$$-x > -14$$

$$x < 14$$





$$(40) \quad |2x + 15| = 3$$

$$\left. \begin{array}{l} 2x + 15 = 3 \\ 2x = -12 \\ x = -6 \end{array} \right\} \begin{array}{l} 2x + 15 = -3 \\ 2x = -18 \\ x = -9 \end{array}$$

$$(41) \quad \left| \frac{x}{6} + 4 \right| = 5$$

SPLIT...  
into

$$\left. \begin{array}{l} \frac{x}{6} + 4 = 5 \\ \frac{x}{6} = 1 \\ x = 6 \end{array} \right\} \begin{array}{l} \frac{x}{6} + 4 = -5 \\ \frac{x}{6} = -9 \\ x = -54 \end{array}$$

$$(42) \quad |-3x + 20| = 35$$

$$\left. \begin{array}{l} -3x + 20 = 35 \\ -3x = 15 \\ x = -5 \end{array} \right\} \begin{array}{l} -3x + 20 = -35 \\ -3x = -55 \\ x = \frac{55}{3} \end{array}$$

$$(43) \quad |12x - 18| = 0$$

$$\begin{array}{l} 12x - 18 = 0 \\ 12x = 18 \\ x = \frac{18}{12} = \frac{3}{2} \end{array}$$

$$(44) \quad |8x - 5| < 27$$

$$-27 < 8x - 5 < 27$$

$$-22 < 8x < 32$$

$$-\frac{22}{8} < x < \frac{32}{8}$$

$$-\frac{11}{4} < x < 4$$

$$(45) \quad \left| \frac{5}{6}x + 1 \right| > 6$$

$$\frac{5}{6}x + 1 < -6$$

$$\frac{5}{6}x + 1 > 6$$

$$\frac{5}{6}x < -7$$

$$\frac{5}{6}x > 5$$

$$x < -\frac{42}{5} \quad \text{or} \quad x > 6$$

$$(46) \quad |6 - 7x| \leq 34$$

$$-34 \leq 6 - 7x \leq 34$$

$$-40 \leq -7x \leq 28$$

$$\frac{40}{7} \geq x \geq 4$$

$$(47) \quad |19 + 3x| \geq 46$$

$$19 + 3x \leq -46 \quad \text{or} \quad 19 + 3x \geq 46$$

$$3x \leq -65 \quad \text{or} \quad 3x \geq 27$$

$$x \leq -\frac{65}{3} \quad \text{or} \quad x \geq 9$$



$$(48.) \quad 3x + 12 = 32$$

$$3x = 20$$

$$x = \frac{20}{3}$$

$$(49.) \quad x - 8 = 15$$

$$x = 23$$

$$(50.) \quad x + x + 1 + x + 2 + x + 3 = 46$$

$$4x + 6 = 46$$

$$4x = 40$$

$$x = 10$$

10, 11, 12, 13

$$(51.) \quad a) \quad y = 8 + 2x \quad \text{where } y = \text{total cost and } x = \# \text{ of hours}$$

$$b) \quad y = 8 + 2(6) = 8 + 12 = 20 \quad \$20 \text{ for one person.}$$

\$40 for two people

$$(52.) \quad \text{Henry: } 4 + 9 = \$13$$

$$\text{John: } 4 + 6 = \$10$$

$$\text{Sally: } 9(2) = \$18$$

$$b) \quad \text{Total: } \$41$$