

# KEY

## College Prep Algebra Summer Packet Class Opener 2 Evaluate

1.  $(4-3)(1-(3+5)) \times 5$   
 $(1)(1-8) \times 5$   
 $(1)(-7) \times 5$   
 $-7 \times 5$   
 $-35$

2.  $((-16 - (-2 + 1)) \times 2) \div 5$   
 $((-16 + (+1)) \times 2) \div 5$   
 $-15 \times 2 \div 5$   
 $-30 \div 5$   
 $-6$

3.  $-4 - (1 - 5) - (-4) \div 2$   
 $-4 + +4 + 2$   
 $2$

## Simplify

4.  $-10(x-7) - 7(x+2)$   
 $-10x + 70 - 7x - 14$   
 $-17x + 56$

5.  $-2(-6x-9) - 4(x+9)$   
 $12x + 18 - 4x - 36$   
 $8x - 18$

6.  $-10(-8x+9) - 8x$   
 $80x - 90 - 8x$   
 $72x - 90$

## Solve each equation.

7.  $6(6v+6) - 5 = 1 + 6v$   
 $36v + 36 - 5 = 1 + 6v$   
 $36v + 31 = 1 + 6v$   
 $-6v \quad -6v$   
 $30v + 31 = 1$   
 $-31 \quad -31$   
 $30v = -30$   
 $30 \quad 30$   
 $v = -1$

8.  $-4k + 2(5k-6) = -3k - 39$   
 $-4k + 10k - 12 = -3k - 39$   
 $6k - 12 = -3k - 39$   
 $+3k \quad +3k$   
 $9k - 12 = -39$   
 $+12 \quad +12$   
 $9k = -27$   
 $9 \quad 9$   
 $k = -3$

9.  $-12 = 3 - 2k - 3k$   
 $-12 = 3 - 5k$   
 $-3 \quad -3$   
 $-15 = -5k$   
 $-5 \quad -5$   
 $3 = k$   
 $k = 3$

## Solve

10.  $|5x| + 5 = 45$   
 $-5 \quad -5$   
 $|5x| = 40$   
 $\frac{5x}{5} = \frac{-40}{5} \quad \frac{5x}{5} = \frac{40}{5}$   
 $x = -8, 8$

11.  $3|-8x| + 8 = 80$   
 $-8 \quad -8$   
 $3|-8x| = 72$   
 $3 \quad 3$   
 $|-8x| = 24$   
 $\frac{-8x}{-8} = \frac{-24}{-8} \quad \frac{-8x}{-8} = \frac{24}{-8}$   
 $x = 3, -3$

12.  $-5|3+4k| = -115$   
 $-5 \quad -5$   
 $|3+4k| = 23$   
 $3+4k = 23 \quad 3+4k = -23$   
 $-3 \quad -3 \quad -3 \quad -3$   
 $4k = 20 \quad 4k = -26$   
 $4 \quad 4 \quad 4 \quad 4$   
 $k = \frac{5}{2}, -\frac{13}{4}$

13.  $\frac{7p+4}{8} = 3(8)$   
 $|7p+4| = 24$   
 $7p+4 = 24 \quad 7p+4 = -24$   
 $-4 \quad -4 \quad -4 \quad -4$   
 $7p = 20 \quad 7p = -28$   
 $7 \quad 7 \quad 7 \quad 7$   
 $p = \frac{20}{7}, -4$

Solve each compound inequality and graph its solution.

$$14. \begin{array}{l} n+1 \leq -3 \text{ or } -4n < -8 \\ -1 \quad -1 \quad -4 \quad -4 \end{array}$$

$$\boxed{n \leq -4 \text{ or } n > 2}$$

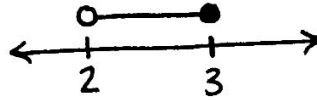


$$15. -33 \leq -7n - 12 < -26$$

$$\begin{array}{l} +12 \quad +12 \quad +12 \\ -21 \leq -7n < -14 \\ -7 \quad -7 \quad -7 \end{array}$$

$$3 \geq n > 2$$

$$\boxed{2 < n \leq 3}$$



$$16. 9 + 2b < 7 \text{ or } 7 - 5b < -8$$

$$\begin{array}{l} -9 \quad -9 \quad -7 \quad -7 \\ 2b < -2 \quad -5b < -15 \\ 2 \quad 2 \quad -5 \quad -5 \\ b < -1 \quad b > 3 \end{array}$$

$$b < -1$$

$$\boxed{b < -1 \text{ or } b > 3}$$



Solve each inequality and graph its solution.

$$17. \frac{(3)|2x+3|}{3} > -12(3)$$

$$|2x+3| > -36$$

$$\boxed{\text{All Real \#s}}$$

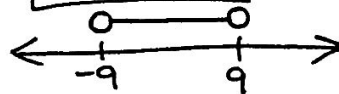
$$18. 7 \left| \frac{x}{3} \right| - 9 < 12$$

$$\begin{array}{l} +9 \quad +9 \\ 7 \left| \frac{x}{3} \right| < 21 \\ 7 \quad 7 \end{array}$$

$$-3 < \left| \frac{x}{3} \right| < 3$$

$$(3) -3 < \frac{x}{3} < 3(3)$$

$$\boxed{-9 < x < 9}$$



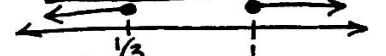
$$19. 9|3n-2| + 6 \geq 15$$

$$\begin{array}{l} -6 \quad -6 \\ 9|3n-2| \geq 9 \\ 9 \quad 9 \end{array}$$

$$-1 \geq |3n-2| \geq 1$$

$$\begin{array}{l} 3n-2 \leq -1 \quad 3n-2 \geq 1 \\ +2 \quad +2 \quad +2 \quad +2 \\ \frac{3n}{3} \leq \frac{1}{3} \quad \frac{3n}{3} \geq \frac{3}{3} \end{array}$$

$$\boxed{n \leq \frac{1}{3} \text{ or } n \geq 1}$$



Solve by factoring.

$$20. x^2 - 16x + 63 = 0$$

$$-9 \quad -7$$

$$\boxed{x = 9, 7}$$

$$21. 7x^2 - 31x - 20 = 0$$

$$\begin{array}{l} -140 \\ -35 \quad 4 \end{array}$$

$$\frac{7x}{-15} \quad \frac{7x}{4}$$

$$\boxed{x = 5, -\frac{4}{7}}$$

$$22. 2b^2 + 17b + 21 = 0$$

$$\begin{array}{l} 42 \\ 3 \quad 14 \end{array}$$

$$\frac{2b}{3} \quad \frac{7b}{14}$$

$$\boxed{b = -7, -\frac{3}{2}}$$

Solve each equation with the quadratic equation.

$$23. k^2 + 5k - 6 = 0$$

$$\frac{-5 \pm \sqrt{(5)^2 - 4(1)(-6)}}{2(1)}$$

$$\frac{-5 \pm \sqrt{49}}{2} = \frac{-5 \pm 7}{2} \begin{cases} \frac{-5-7}{2} = -\frac{12}{2} \\ \frac{-5+7}{2} = \frac{2}{2} \end{cases}$$

$$\boxed{k = -6, 1}$$

$$24. 2v^2 - 5v + 3 = 0$$

$$\frac{5 \pm \sqrt{(-5)^2 - 4(2)(3)}}{2(2)}$$

$$\frac{5 \pm \sqrt{1}}{4} = \frac{5 \pm 1}{4} \begin{cases} \frac{5+1}{4} = \frac{6}{4} \\ \frac{5-1}{4} = \frac{4}{4} \end{cases}$$

$$\boxed{v = \frac{3}{2}, 1}$$

$$25. 2a^2 - a - 15 = 0$$

$$\frac{1 \pm \sqrt{(-1)^2 - 4(2)(-15)}}{2(2)}$$

$$\frac{1 \pm \sqrt{121}}{4} = \frac{1 \pm 11}{4} \begin{cases} \frac{1+11}{4} = \frac{12}{4} \\ \frac{1-11}{4} = \frac{-10}{4} \end{cases}$$

$$\boxed{a = 3, -\frac{5}{2}}$$

Simplify

$$26. \sqrt{108} = \boxed{6\sqrt{3}} \quad 27. \sqrt{28} = \boxed{2\sqrt{7}} \quad 28. \sqrt{96} = \boxed{4\sqrt{6}} \quad 29. \sqrt{200} = \boxed{10\sqrt{2}} \quad 30. \sqrt{256} = \boxed{16}$$