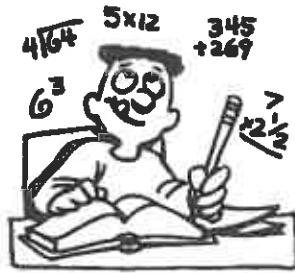


So you are going to Algebra I next year?!

****You are required to complete and hand in this packet the first day of school.****

All work must be shown in this packet or on a separate sheet of paper to receive credit.



Topics included in packet:

Solving Multi-Step Equations

Solving Proportions

Solving Multi-Step Inequalities

Evaluating Expressions

Simplifying Complex Expressions

****It is understood and expected that students in Algebra 1 are experts at operating with integers.****

Math 7 to Algebra 1

Solve each equation.

1) $-x + 8 = -5x + 1 - 1$

2) $-8 + 8 - 2x - 6x = -8x + 5x$

$$\begin{array}{r} -8x = -3x \\ +8x \quad +8x \end{array}$$

$$\hline$$

$$\frac{0}{5} = \frac{5x}{5}$$

$$0 = x$$

3) $6 + 7v = 1 + 2v$

4) $-4x + 13 = -8x + 7 - 6$

5) $3(5n - 12) = 6n - 2(1 + 4n)$

6) $11n - 7n = 7(n - 3) - 7(8 + 2n)$

$$4n = 7n - 21 - 56 - 14n$$

$$\begin{array}{r} 4n = -7n - 77 \\ +7n \quad +7n \end{array}$$

$$\hline \frac{11n}{11} = \frac{-77}{11}$$

$$n = -7$$

7) $-(-3 - 3n) + 5 = 2(n + 7)$

8) $-2(-5v - 7) = 2(v + 3)$

$$9) x + 1 - 2x = 8(-10x - 8) - 12(1 - 6x)$$

$$10) -2(r - 9) - 7(5 - 2r) = 2r - 5 - 2$$

$$11) 11k - 6(k - 11) = -4 + 11(k + 8)$$

$$\underline{11k} - \underline{6k} + 66 = \underline{-4} + 11k + \underline{88}$$

$$\begin{array}{r} 5k + 66 = 84 + 11k \\ -5k \quad \quad -5k \end{array}$$

$$\begin{array}{r} 66 = 84 + 6k \\ -84 \quad -84 \end{array}$$

$$\begin{array}{r} -18 = 6k \\ 6 \quad 6 \end{array}$$

$$-3 = k$$

$$12) -8(x - 1) = 5(x + 5) + 4x$$

$$13) -11(7 + 4x) = -7(10x - 1) - 2x$$

$$14) 10(8 - a) - 8 = -8(a - 10)$$

Solve each proportion. Write your answer as a fraction in simplest form.

$$15) \frac{n-7}{8} = \frac{10}{5}$$

$$16) \frac{11}{6} = \frac{k-8}{9}$$

$$11(9) = 6(k-8)$$

$$\begin{array}{r} 99 = 6k - 48 \\ +48 \quad \quad +48 \end{array}$$

$$\begin{array}{r} 147 = 6k \\ 6 \quad 6 \end{array}$$

$$\frac{49}{2} = k$$

$$17) \frac{3m+7}{12} = -\frac{7}{4}$$

$$4(3m+7) = 12(-7)$$

$$\begin{array}{r} 12m + 28 = -84 \\ -28 \quad -28 \end{array}$$

$$\frac{12m}{12} = -\frac{112}{12}$$

$$m = -\frac{28}{3}$$

$$18) -\frac{4}{5} = \frac{8}{a+9}$$

$$19) \frac{5}{m-3} = -\frac{6}{9}$$

$$20) \frac{8}{10} = \frac{12}{7x+8}$$

$$21) \frac{a+3}{2} = \frac{9}{6}$$

$$22) \frac{10}{5} = \frac{7}{k+2}$$

Solve each inequality.

$$23) \begin{array}{r} 4k+3 \geq 8+5k \\ -5k \quad -5k \end{array}$$

$$\frac{-k+3 \geq 8}{-3 \quad -3}$$

$$\frac{-k}{-1} \geq \frac{5}{-1}$$

$$k \leq -5$$

$$24) -8x+2+7 \geq 15-4x-6x$$

$$25) -4 + 4x + 4x \geq 1 + 7x$$

$$26) 14 - 3x < x + 8 - 7x$$

$$27) 7(3v + 2) \geq 32 + 3v$$

$$28) 26 + 8a < 4(1 + 4a) + 3a$$

$$26 + 8a < 4 + 16a + 3a$$

$$26 + 8a < 4 + 19a$$

$$\begin{array}{r} -8a \\ \hline \end{array} \quad \begin{array}{r} -8a \\ \hline \end{array}$$

$$\frac{26}{-4} < \frac{4}{-4} + 11a$$

$$\frac{22}{11} < \frac{11a}{11}$$

$$2 < a \longrightarrow a > 2$$

$$29) 12 + 8n > -3(-4 - 5n)$$

$$30) -4k - 26 > 2(-6k - 1)$$

$$31) -7(1 - 4p) < -7 - 3p$$

$$32) -2x - 3(-8x - 1) \geq x - 39$$

33) $-4 + 6n \geq -5(4n + 6)$

34) $1 - 2a \leq 3(2a - 5)$

35) $-8x - 40 > -8(8 - 2x)$

36) $8(x - 1) \geq 34 + 2x$

Evaluate each using the values given.

37) $x - x + z + \frac{x}{4} - x$; use $x = 4$, and $z = -3$

$$\begin{array}{r}
 4 - 4 + (-3) + \frac{4}{4} - 4 \\
 0 - 3 + 1 - 4 \\
 -2 - 4 \\
 -6
 \end{array}$$

38) $-5 + (y)(y + 6 + x^2)$; use $x = 2$, and $y = 4$

39) $(-2)^2 + j + j^2k$; use $j = -2$, and $k = 2$

Evaluate each expression. Write your answer as a fraction in simplest form.

$$40) 2\frac{4}{5}\left(6 - \frac{9}{5}\right)$$

$$41) \left(3\frac{2}{3} - 2\right)^2$$

$$42) \frac{\frac{3}{2}}{\frac{4}{5}} \times 2\frac{1}{2}$$

$$43) \frac{3\frac{1}{6}}{3\frac{3}{4} + 1\frac{3}{4}}$$

$$\frac{\frac{3}{2}}{\frac{9}{5}} \times \frac{5}{2}$$

$$\frac{\cancel{3}^1 \left(\frac{5}{\cancel{9}_3}\right) \times \frac{5}{2}}{\frac{5}{6} \times \frac{5}{2}} = \frac{25}{12}$$

Solve each equation.

$$44) -2(x + 2) = -3(1 + x)$$

$$45) 6(4b - 2) = -3(2b + 4)$$

$$46) -8r - 8(r - 2) = 8(3 - r)$$

$$47) 7x + 2(x + 5) = 3(3x + 5)$$

$$\underline{7x} + \underline{2x} + 10 = 9x + 15$$

$$\begin{array}{r} 9x + 10 = 9x + 15 \\ -9x \qquad -9x \\ \hline \end{array}$$

$$10 \neq 15$$

No Solution \rightarrow $10 = 15$
(Never true!)

$$48) 4(6p - 5) = 8(3p + 4)$$

$$49) -8k - k = 5(8k - 5) + 8(-7 - 5k)$$

$$50) -5(11 + 5x) + 10(x - 4) = -9x - x$$

$$51) 8(1 - 11x) = 8(1 - 11x)$$

$$\begin{array}{r} 8 - 88x = 8 - 88x \\ + 88x \quad + 88x \\ \hline \end{array}$$

$$8 = 8$$

→ * Always true!
All Real Numbers

$$52) 9(6 + 2p) = -8(p - 10)$$

$$53) -8(5 + 3n) = 5(n - 8) - 3n$$

$$54) 5(4 + x) = 7x + 2(10 - x)$$

$$55) -12(-4n + 5) + 12 = -10(1 - 5n)$$