GEOMETRY ACCELERATED
SUMMER MATH PACKET 2021

This packet is due on the first day of school. Work is required. It will be collected and graded on completion.

ORDER OF OPERATIONS

1) \(18 \div 6(4) + 315\)

2) \(25 + 3|9 - 15| - 3^5\)

3) \(\frac{28 - 4(2 + 4^2)}{15 \times 4 - 6 \times 10}\)

4) \((6 - 4) \cdot (3 + 5) - (-2)^3\)

5) \(-\frac{5}{2} + \frac{9}{5} - \left(\frac{2}{3}\right) \left(-\frac{7}{4}\right)\)

6) \(|-6 - \frac{32}{5}|(10) - 4 \cdot 3^3\)

7) \(\frac{(2 + 9)^2 - (13 - 27)}{4 + 7 - (-8)(-4)}\)

8) \(2 \left\{8^2 - 7 \left[32 - 4(3^2 + 1)\right]\right\}(-1)\)

9) \(1 + 3 |(-4)^2 - (-8)| + 2 |3 + (-5)^2|\)

10) \(\frac{5 + 3^2 - 23 - 6 \cdot 2}{[5 + 3(2^2 - 5)] + |2^2 - 5|^2}\)
LINEAR EQUATIONS IN ONE VARIABLE

Solve each equation for \( x \).

11) \(-\frac{4}{3}x = -\frac{8}{9}\)

12) \(-2x + 56 = -23\)

13) \(29x + 38 = -17x - 13.75\)

14) \(-4x + 9 = 2(x - 5) + 12x\)

15) \(-\frac{3}{4}x - 5 = -x + 9\)

16) \(\frac{3}{4} + \frac{1}{12}x = \frac{5}{48}x - 6\)

17) \(-8(3x - 7) + 3(x - 3) = 11(4x - 5) - (5x + 4)\)

18) \(2 - 3[4x - x + 2] = -13x - 10 - 2(x - 9)\)

19) \(\frac{3x - 9}{5} = -\frac{5x - 1}{3}\)

20) \(\frac{4(2x - 3)}{3} = -\frac{7(4 - x)}{2}\)
LINEAR EQUATIONS IN TWO VARIABLES

21) Find the slope of the line that passes through \((-2, 8)\) and \((-10, 14)\).

22) Find the slope of the line that passes through \((-5, -13)\) and \((7, -13)\).

23) Write an equation in slope-intercept form that passes through \((-4, -2)\) and has a slope of \(-9\).

24) Write an equation in slope-intercept form that passes through \((9, -3)\) and has a slope of \(-\frac{1}{4}\).

25) Write an equation in slope-intercept form that passes through \((-3, 6)\) and \((10, 6)\).

26) Write an equation in slope-intercept form that passes through \((\frac{3}{2}, -\frac{1}{4})\) and \((-\frac{1}{3}, -\frac{17}{2})\).

27) Write an equation in point-slope form that passes through \((8, -7)\) and has a slope of \(-\frac{9}{4}\).

28) Write an equation in standard form that passes through \((-6, 4)\) and \((5, 16)\).

29) Write an equation in slope-intercept form that passes through \((3, -2)\) and is perpendicular to \(y = \frac{4}{3}x - 1\).

30) Write an equation in slope-intercept form that passes through \((-4, -5)\) and is parallel to \(5x + 2y = -12\).
SYSTEMS OF EQUATIONS

Solve each system of equations using the method of your choice.

31) \[
\begin{align*}
    x - 2y &= 6 \\
    7x - 2y &= -6
\end{align*}
\]

32) \[
\begin{align*}
    x - 3y &= -6 \\
    4x + 3y &= -9
\end{align*}
\]

33) \[
\begin{align*}
    6x - y &= 13 \\
    y &= 2x - 1
\end{align*}
\]

34) \[
\begin{align*}
    \frac{1}{4}a + 7b &= 14 \\
    a - 3b &= -16
\end{align*}
\]

35) \[
\begin{align*}
    3k - w &= 4 \\
    5k + 3w &= 9
\end{align*}
\]

36) \[
\begin{align*}
    3c - 2d &= 2 \\
    4c &= 7d + 33
\end{align*}
\]

37) \[
\begin{align*}
    2(y + 2) &= x \\
    x - 2y &= 4
\end{align*}
\]

38) \[
\begin{align*}
    2m + 3p &= 8 \\
    p + 2m &= 6
\end{align*}
\]

39) \[
\begin{align*}
    1.5x - 2y &= -0.25 \\
    3(x + \frac{1}{2}y) &= 6.375
\end{align*}
\]

40) \[
\begin{align*}
    \frac{1}{2}a - \frac{2}{3}b &= 7 \\
    \frac{2}{3}a - \frac{3}{4}b &= 11
\end{align*}
\]
SIMPLIFYING RADICALS

Simplify each expression. Give an exact answer that is simplified as much as possible. No decimals are allowed. The problems with an * indicate that work is required.

41) \( \sqrt{96} \)  
42) \( \sqrt{12} \cdot \sqrt{9} \)

*43) \((-7\sqrt{15})(-8\sqrt{18})\)  
44) \((-2\sqrt{21})^2\)

45) \(5\sqrt{7} + 4\sqrt{7} - \sqrt{25}\)  
*46) \(-2\sqrt{15} + \sqrt{300} + \sqrt{3} - \sqrt{60}\)

*47) \((\sqrt{3} + 2)(\sqrt{3} - 5)\)  
*48) \((\sqrt{14} - 5)^2\)

49) \(\frac{-15\sqrt{38}}{3\sqrt{19}}\)  
*50) \(\frac{\sqrt{5}}{\sqrt{12}}\)
QUADRATIC EQUATIONS

Use factoring and the Zero Product Property to solve each quadratic equation.

51) \(8x^2 + 24x = 0\)  
52) \(46x^2 - 161x = 0\)

53) \(x^2 + 4x - 45 = 0\)  
54) \(3x^2 - 38x - 13 = 0\)

55) \(6x^2 = -11x + 35\)

Use the Quadratic Formula to solve each quadratic equation.

56) \(x^2 - 5x - 1 = 0\)  
57) \(2x^2 - 8x + 5 = 0\)

58) \(x^2 = 12x - 17\)  
59) \(3x = -9x^2 + 1\)

60) \(6x^2 - 5x - 16 = -29x + 8\)