Complete this packet, showing all work and bring it with you to the first day of school. Use any resources available (peers, Google, youtube, Khanacademy, IXL, etc.)

**Click this [link](#) to watch a video to review the topic below.**

1) For the data set below, find the mean.

![Life Expectancy by State](image)

2) For the data set below, find the median.

<table>
<thead>
<tr>
<th>Age at First Job</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
</tr>
<tr>
<td>17</td>
</tr>
<tr>
<td>22</td>
</tr>
</tbody>
</table>

3) For the data set below, find the mean, median and mode.

![2012 Summer Olympics](image)
4) The formula for the surface area of a sphere is \( SA = 4\pi r^2 \). Find the DIAMETER (in inches) of the sphere whose surface area is \( 256\pi \text{ sq in} \).

5) The formula for the volume of a cone is \( V = \frac{1}{3}Bh \). Find h (in centimeters) if \( V = 176 \text{ cm}^3 \) and \( B = 40 \text{ cm}^2 \).

Click this link for #6 and this link for #7-8 to watch a video to review the topic below.

For #6-8, determine whether each of the following represents a function or not. Why? If it does, state the domain and range.

<table>
<thead>
<tr>
<th>Time</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height (ft)</td>
<td>250</td>
<td>250</td>
<td>290</td>
<td>310</td>
<td>330</td>
</tr>
</tbody>
</table>

7) 

8)
Click this [link](#) or this [link](#) to watch a video to review the topic below.

**Order of Operations.**

9) \[15 - 3(26 - 20) + 25 \div 5 \times 11\] =

10) \[6^2 - 4(7^2 - 32 \div 4 \times 3)\] =

11) \[10 - 5\left(20 - 2(3^2 + 1)\right)\] =

12) \[\frac{48 - 24 \div 2^3}{3 + 2 \times 6}\]

Click this [link](#) to watch a video to review the topic below.

Evaluate the absolute value expression.

13) \[-|2 - 5| = \]

14) \[\left| \frac{1}{2} \right| = \]

15) \[|8 - 3| = \]

Click this [link](#) to watch a video to review the topic below.

Use the Distributive Property to simplify each expression.

16) \[3x(x - 11)\]

17) \[-\frac{2}{3}(3x - 6)\]

18) \[4 - 2\left(\frac{x^2}{3} - \frac{1}{3}x\right)\]

19) \[\frac{1}{4}\left(9x + \frac{4}{3}y\right)\]
Evaluate the following functions when $x = -2, 0, 3$ without a calculator.

20) $f(x) = -2x^2 + x - 5$

21) $g(x) = -x^3 + 2$

22) $p(x) = -3x^3 + 2x - 1$

23) Multiply the expression.
   a) $(3x - 1)(4x + 3)$
   b) $(2x - 4)(3x^2 + 5x - 8)$
Graph the following functions using a table of values.

24) \( f(x) = 3x - 4 \)

<table>
<thead>
<tr>
<th>x</th>
<th>y</th>
</tr>
</thead>
<tbody>
<tr>
<td>-2</td>
<td></td>
</tr>
<tr>
<td>-1</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

25) \( f(x) = -2x^2 + 3 \)

<table>
<thead>
<tr>
<th>x</th>
<th>y</th>
</tr>
</thead>
<tbody>
<tr>
<td>-2</td>
<td></td>
</tr>
<tr>
<td>-1</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>
Find the x-intercept and y-intercept for:

26) \[ 4y = 12x - 6 \]

27) the line that passes through the points \( A(3,4) \) \( B(-1,8) \)

28) If you connect \((0,-4)\) and \((-5,2)\) you get a linear function with slope of \( m = \) 
and y-intercept of \( b = \) 

Solve each system of equations.

29) \[
\begin{align*}
2x + 5y &= 1 \\
x - y &= -3
\end{align*}
\]

30) \[
\begin{align*}
x + 3y &= 7 \\
x &= 2y + 2
\end{align*}
\]
Click this [link](#) to watch a video to review the topic below.

Simplify each expression using the properties of exponents.

31) $$(3x)^0$$

32) $$3x^0$$

33) $$\left(\frac{4}{3}\right)^2$$

34) $$yz^{-2}(x^2y)^3z$$

35) $$(-3x^2y^4)^3$$

36) $$(5m^2n)(6m^3n^2)$$

37) \[
\frac{5x^2y^{-5}}{15y^3x^4} \cdot \frac{9x^3}{2x^{-5}y^7}
\]

38) \[
\frac{27x^2y}{57xy^{-1}}
\]
Click this link to watch a video to review the topic below.

Graph the following inequalities on a number line.

39) $-5 < x \leq 2$

40) $-2x > 6$

41) $4x - 14 \geq -26$

Click this link to watch a video to review the topic below.

Factor the following expressions.

42) $x^2 + 8x + 15$

43) $2x^2 + 4x - 48$

44) $3x^2 - 11x - 20$

45) $6x^2 + 45x$

46) $16x^2 - 25$
Click this link to watch a video to review the topic below.

Solve the following equations.

47) \((x - 8)(x + 3) = 0\)

48) \(x^2 - 2x - 35 = 0\)

49) \(x^2 + 5x = -6\)

50) \(0 = 6x^2 - 7x - 5\)

51) \(x^2 - 121 = 0\)

52) \(2x^2 - 8x = 0\)

53) \(3x^2 - 4x = 7\)