

Review - Polynomials & Types of Functions

Simplifying Expressions

Add/Subtract - Only add like terms, which have same variables + same exponent

Multiply - When multiplying powers with like bases, multiply coefficients and add exponents.

Raise to a Power - Multiply base by itself that many times. If already exponent, multiply exponents.

Divide - When dividing powers with like bases, divide coefficients and subtract exponents. ✓

Ex. 1 $(3x - 1)^2 + 7x - 2$

$(3x - 1)(3x - 1) + 7x - 2$

$9x^2 - 3x - 3x + 1 + 7x - 2$
 $9x^2 + 1x - 1$

You Try 2 $5x(3x^3 + 2x) + (2x + 7)^2$

$5x(3x^3 + 2x) + (2x + 7)(2x + 7)$
 $15x^4 + 10x^2$

$4x^2 + 14x + 14x + 49$
 $15x^4 + 14x^2 + 28x + 49$

Ex. 3 $\left(\frac{3x}{x^5}\right)^2$

$\frac{3^2 x^2}{x^{10}}$

$\frac{9}{x^8}$

* another way

$\left(\frac{3x}{x^5}\right)^2$

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

$\frac{3^2}{x^8}$

$\frac{9}{x^8}$

You Try 4 $\frac{8x^5y^2}{2xy} \cdot (z^2)^4$

$4x^4y^1 \cdot z^8$

Types of Functions

	Linear	Quadratic	Absolute Value	Exponential																																				
Equation	Slope-Intercept $y = mx + b$ Standard $Ax + By = C$ HOY VUX Horiz, $m = 0, y =$ vertical, $m =$ undef, $x =$	Vertex $f(x) = a(x-h)^2 + k$ Standard $y = ax^2 + bx + c$	$y = x $	$y = a^x$ X is the exponent																																				
Table	<table border="1"> <thead> <tr> <th>X</th> <th>Y</th> <th>A/Y</th> <th>X</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>20</td> <td>1/4</td> <td>1</td> </tr> <tr> <td>2</td> <td>40</td> <td>1/4</td> <td>2</td> </tr> <tr> <td>3</td> <td>60</td> <td>1/4</td> <td>3</td> </tr> </tbody> </table> Constant RDC	X	Y	A/Y	X	1	20	1/4	1	2	40	1/4	2	3	60	1/4	3	repeating y-value ✓ <table border="1"> <thead> <tr> <th>X</th> <th>Y</th> <th>(x,y)</th> </tr> </thead> <tbody> <tr> <td>-2</td> <td>3</td> <td>(-2, 3)</td> </tr> <tr> <td>-1</td> <td>2</td> <td>(-1, 2)</td> </tr> <tr> <td>0</td> <td>1</td> <td>(0, 1)</td> </tr> </tbody> </table>	X	Y	(x,y)	-2	3	(-2, 3)	-1	2	(-1, 2)	0	1	(0, 1)	repeating y-values constant RDC around a sharp turn	$y = 2^x$ <table border="1"> <thead> <tr> <th>X</th> <th>Y</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2</td> </tr> <tr> <td>2</td> <td>4</td> </tr> <tr> <td>3</td> <td>8</td> </tr> </tbody> </table> constant factor	X	Y	1	2	2	4	3	8
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Graph		✓ Parabola 																																						

How can you test to see if a function rule fits the data?

X	Y
0	0
1	1
2	4

$y = x^2$
 $y = 2^x$

$y = (1)^2 = 1$
 $y = (2)^2 = 4$
 $y = 2^{(2)} = 4$
 $y = 2^{(1)} = 2$

* plug in x, see if you get the y.

For Data Questions (like #22 on Practice EOC)

Mean = average (find the sum and divide by how many numbers you added)

Median = middle number (order all numbers least to greatest)

Mode = number that occurs the most (order all numbers least to greatest and find the repeats)