

Unit 1

SM3 Linear, Quadratic, and Cubic Review for Test (2019-2020)

Name _____ Date _____ Period _____

1. Fill out the columns below for the polynomials given.

Polynomial	Standard Form Circle the leading coefficient	# Terms	Degree	Coefficient(s) Circle the constant.
$3x^2 - 7 + 6x$				
$2x + 6x^3$				

Simplify each expression by adding or subtracting. Write your answer in standard form. Show work!

2. $(5x^2 - 11x + 2) + (-x^2 + 5x - 12)$

3. $(8x^2 + 3) - (x^2 - 9x + 5)$

4. $(6x^2 + x^3 + 15) + (x^2 + 13 - 6x)$

5. $(5t^2 - 9t + 2) - (-7t^2 + 2t - 10)$

Simplify each expression. Write your answer in standard form. Show work!

6. $(x - 9)(x + 3)$

7. $(x + 5)(x - 8) - (7x^2 - 9x - 15)$

8. $(y + 6)(9y^2 - 5y - 3)$

9. $(x - 3)(x + 3)$

Divide using polynomial long division. Show work!

10. $(6x^2 - 7x + 7) \div (3x - 2)$

11. $(2x^3 + 3x^2 - x - 3) \div (x + 2)$

Solve for y. Leave answers in fraction form. Show all of your work.

12. $6x - 7y = 35$

13. $y - 4 = \frac{1}{2}(x + 8)$

14. $2y + 10 = x^2$

Solve for y given the value of x. Leave answers as fractions. Show all of your work.

15. $y = \frac{1}{5}x - 15, x = -10$

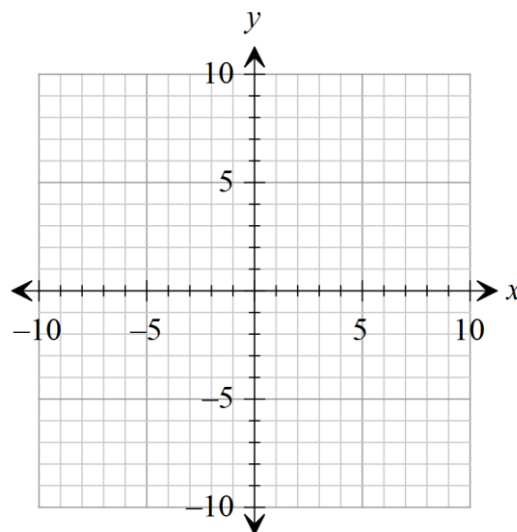
16. $f(-2) = 3x^3 + 37$

17. $f(-4) = 2(x - 1)^2 + 4$

Make a table for each of the following equations. Graph the equations.

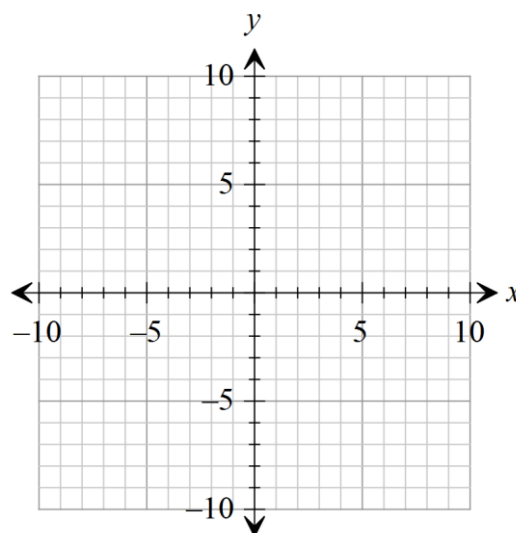
18. $f(x) = (x + 4)^3 - 2$

x	$f(x) = (x + 4)^3 - 2$	$f(x)$	$(x, f(x))$
-6			
-5			
-4			
-3			
-2			



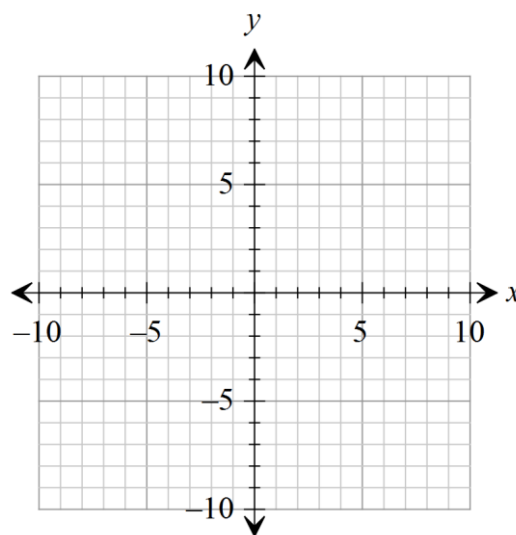
19. $f(x) = -\frac{1}{2}x + 1$

x	$f(x) = -\frac{1}{2}x + 1$	$f(x)$	$(x, f(x))$
-4			
-2			
0			
2			
4			



20. $y = -2x^2 + 5$

x	$y = -2x^2 + 5$	y	(x, y)
-2			
-1			
0			
1			
2			



Using the given functions, simplify the following expressions. Show all of your work.

$f(x) = -5x + 6$ and $g(x) = x^2 + 9$

21. $h(x) = (f + g)(x)$

22. $h(x) = \left(\frac{f}{g}\right)(x)$

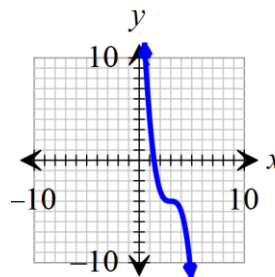
23. $h(x) = (f - g)(x)$

24. $h(x) = (fg)(x)$

State whether it is linear, quadratic, or cubic. Then match each equation with the appropriate graph.

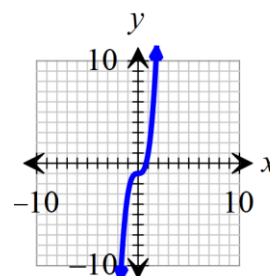
25. $y = \frac{2}{3}x + 8$ _____

Graph _____



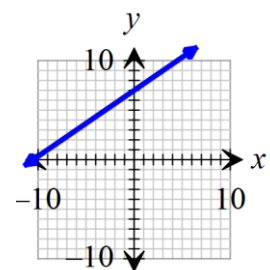
26. $y = -(x - 3)^3 - 4$ _____

Graph _____



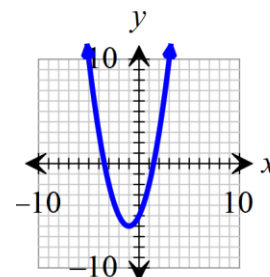
27. $y = x^2 + 2x - 5$ _____

Graph _____



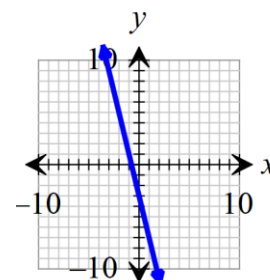
28. $y = 2x^3 - 1$ _____

Graph _____



29. $y = -4x - 3$ _____

Graph _____



30. Find the missing polynomial. Show work.

$$(\quad ? \quad) + (-2x^2 + 8x - 11) = (3x^2 - 2x - 15)$$