

\* must show work for credit \*

Name Key - Answers Only -

Date \_\_\_\_\_

Answer.

1. $f(x) = 5 - 3x^3 + 2x^4 - 4x$ Standard Form: <u><math>2x^4 - 3x^3 - 4x + 5</math></u> Leading Coefficient: <u>2</u> Constant: <u>5</u> Name by Degree: <u>Quartic</u> Name by # of Terms: <u>Polynomial</u>	2. Give an example a quadratic binomial in standard form with a leading coefficient of 17 and a constant of -12.  <u><math>17x^2 - 12</math></u>
---	--

Add/Subtract/Multiply/Binomial Expansion

3. $(2x - 7 + 3x^3) + (x^3 - 2x^2 + 5x)$ <u><math>4x^3 - 2x^2 + 7x - 7</math></u>	4. $(4x^4 - 3x^2 + x - 5) - (2x^2 - 3x^4 - 3x + 1)$ <u><math>7x^4 - 5x^2 + 4x - 6</math></u>
5. $(2x - 3)(x + 2)$ <u><math>2x^2 + x - 6</math></u>	6. $(3x - 1)(x^2 + 2x - 3)$ <u><math>3x^3 + 5x^2 - 11x + 3</math></u>
7. $(a + b)(a^2 + 2ab - b^2)$ <u><math>a^3 + 3a^2b + ab^2 - b^3</math></u>	8. $2x^5(x^3 - 3x^2 + 7)$ <u><math>2x^8 - 6x^7 + 14x^5</math></u>
9. $(x^2 + 4y)^4$ <u><math>x^8 + 16x^6y + 96x^4y^2 + 256x^2y^3 + 256y^4</math></u>	
10. $(2x - 3)^3$ <u><math>8x^3 - 36x^2 + 54x - 27</math></u>	
11. $(5x - 3)^5$ <u><math>3125x^5 - 9375x^4 + 11250x^3 - 6750x^2 + 2025x - 243</math></u>	

12. Solve by factoring.

$4x^2 = 20x$

$x = 0 \quad x = 5$

Solve using quadratic formula

$6x^2 - 8x = -3$

$x = \frac{2}{3} \pm \frac{i\sqrt{2}}{6}$  or  $x = \frac{4 \pm i\sqrt{2}}{6}$

Combine Functions  $f(x) = x^2 - 3x + 4$

$g(x) = 2x + 1$

$h(x) = 3x^3 + 2x - 1$

13.  $g(x) - h(x)$

$$-3x^3 + 2$$

14.  $3f(x) + 2g(x)$

$$3x^2 - 5x + 14$$

15.  $g(x) \cdot f(x)$

$$2x^3 - 5x^2 + 5x + 4$$

16.  $4g(3) + h(-2)$

$$-1$$

Divide Polynomials

17.  $(x^4 - 6x^3 - 40x + 33) \div (x - 7)$

$$x^3 + x^2 + 7x + 9 + \frac{96}{x-7}$$

18.  $(4x^4 - 15x^3 + 7x^2 - 1) \div (x^3 - x + 2)$

$$4x - 15 + \frac{11x^2 - 23x + 29}{4x^4 - 15x^3 + 7x^2 - 1}$$

19.  $(x^3 + 2x^2 - 6x - 9) \div (x - 2)$

$$x^2 + 4x + 2 + \frac{-5}{x-2}$$

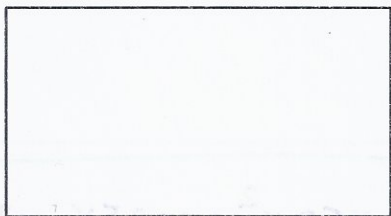
20.  $(6x^3 + 13x^2 - 5) \div (3x^2 + 2x)$

$$2x + 3 + \frac{-6x - 5}{3x^2 + 2x}$$

Find the area and perimeter:

21.  $2x^2 - 9$

$2x + 3$



Area:  $4x^3 + 6x^2 - 18x - 27$

Perimeter:  $4x^2 + 4x - 12$