

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Polynomial Extra Review #1

**To Add and Subtract Polynomials:**

- combine like terms (same variable and same exponent)
- add/subtract coefficients
- keep the base and do not change the exponents
- write all answers in standard form

\*Standard form is when terms are written in order from greatest exponent to least exponent.

1. What is the sum of  $(8x^4 + 9x^2 - 7)$  and  $(12x^3 - 6x^2 + 8)$ ?
2. Subtract  $(14x^3 + 8x^2 - 9)$  from  $(10x^3 - 4x^2 + 8x + 2)$ .
3. What is the perimeter of a square if one side is represented by  $7x + 3$ ?

**To Multiply Monomials and Polynomials:**

- distribute by multiplying the coefficients
- add the exponents of the like bases

4. What is the product of  $-3x^2$  and  $(7x^2 - 8x + 1)$ ?
5. Distribute:  $4x^2yz^4(-2xy^2z + 9x^2y - 3xyz)$
6. What is the product of  $(x - 8)$  and  $(x + 2)$ ?
7. Write the following as a trinomial:  $(2x - 3)^2$

**To Divide Monomials and Polynomials:**

- if it applies, rewrite each term of the polynomial divided by the monomial
- divide the coefficients
- subtract the exponents of the like bases

8. Divide:  $\frac{14m^5n^6p^{10}}{7mn^2p^2}$
9. Simplify the following:  $\frac{10x^2y^9 + 25x^3y^8 - 5x^2y}{5x^2y}$
10. If the area of a rectangle is represented by  $18d^2f^7g^{12}$ , and the width is represented by  $3df^2g^6$ , then what is the length represented by?

**To Use the Power Rule:**

- raise the coefficient to the power outside the parentheses
- raise each base with an exponent to that same power and multiply the exponents

11. Rewrite each of the following:
  - a)  $(k^8)^3$
  - b)  $(-4h^6)^2$
  - c)  $(-3m^4n^7p)^5$

**To Make a Negative Exponent Positive:**

- Write its reciprocal (flip) and make the exponent positive

12. Rewrite the following using positive exponents:
  - a)  $s^{-5}$
  - b)  $(2m^4)^{-3}$
  - c)  $-3x^{-8}$

**To Simplify a Non-Zero Value with a Zero Exponent:**

- any non-zero value raise to the zero exponent has a value of 1
- Negative exponents go in the denominator and make the exponent positive
- Positive exponents go in the numerator
- Coefficients always go in the numerator

13. Simplify each of the following:
  - a)  $6x^0$
  - b)  $\left(\frac{4}{9}y^3\right)^0 + \left(\frac{5}{6}\right)$
  - c)  $\frac{14x^2y^8}{2x^3y^9}$

14.	The expression $(-2a^2b^3)(4ab^5)(6a^3b^2)$ is equivalent to		
15.	Which expression is equivalent to $-3x(x-4) - 2x(x+3)$ ?		
Fill in the "?" for each of the following to make the statements true.			
16.	$(4k^3)^2 = 16k^6$ 17. $(12g^4h^8)(-3g^2h^{12}) = -36g^{10}h^{20}$		
18.	$(y-3)(y+?) = y^2 + 3y - 18$ 19. $\frac{4d^4e^5 - 2d^8e^7}{2d^7e^2} = 2d^3e^3 - d^7e^5$		
20.	$(9x^2 + 8x + 2) + (3x^2 - 7x - 1) = 12x^2 + 1x^2 + 1$		
21.	What is the value of $4(xy)^0$		
(1) 1	(2) $xy$	(3) 4	(4) 0
22.	The perimeter of a square is $40x + 12$ . What is the length of one of its sides?		
23.	The length of a rectangle is $(2f + 5)$ ft. & the width is represented by $(f - 3)$ ft. Find: a) the perimeter of the rectangle      b) the area, in square feet, of the rectangle		

24.	The expression $\frac{-32x^8}{4x^2}$ , $x \neq 0$ , is equivalent to		
(1) $8x^4$	(2) $-8x^4$	(3) $8x^6$	(4) $-8x^6$
25.	What is the simplified form of $3a^4b^{-2}c^3$ ?		
(1) $\frac{81a^4c^3}{b^2}$	(3) $\frac{3a^4}{b^2c^3}$		
(2) $\frac{81a^4}{b^2c^3}$	(4) $\frac{3a^4c^3}{b^2}$		
26.	What is the product of $2r^2 - 5$ and $3r$ ?		
(1) $6r^3 - 15r$	(2) $6r^2 - 15r$	(3) $6r^3 - 5$	(4) $6r^2 - 15$
27.	Which of the following is equal to $\frac{x^2y + y^2}{-y}$ ?		
(1) $-x^2 - y$	(2) $-x^2 + y^2$	(3) $x^2 + y$	(4) $x^2 + y^2$
28.	Which expression is equivalent to $x^{-1} \cdot y^2$		
(1) $xy^2$	(3) $\frac{x}{y^2}$		
(2) $\frac{y^2}{x}$	(4) $xy^{-2}$		
29.	$(-2x^2)^3 =$		
(1) $-2x^5$	(2) $-8x^5$	(3) $-8x^6$	(4) $-6x^5$

<p>30. For a photo at a family reunion, 8gh people arranged in 4h rows, with an equal number of people in each row. Which expression represents the number of people in one row of the photograph?</p> <p>(1) 2g (2) 4g (3) 12gh<sup>2</sup> (4) 32gh<sup>2</sup></p>
<p>31. Which expression represents <math>\frac{(2x^3)(8x^5)}{4x^6}</math></p> <p>(1) <math>x^2</math> (2) <math>4x^2</math> (3) <math>4x^9</math> (4) <math>4x^{21}</math></p>
<p>32. A pizza shop owner is monitoring the amount of cheese he uses each week. The polynomials below model the pounds of cheese ordered in the past, where <math>p</math> represents pounds.</p> <p>Mozzarella: <math>3p^2 - 6p^2 + 14p + 125</math> Cheddar: <math>12.5p^2 + 18p + 75</math></p> <p>Write a polynomial that models the total number of pounds of cheese ordered.</p>
<p>33. The length of a rectangle is <math>(4x + 5)</math> and the width of a rectangle is <math>(x + 1)</math>.</p> <p>a) Find the perimeter of the rectangle.      b) Find the area of the rectangle</p>

<p>34. Kelly simplified <math>(x + 2)^2</math> and got <math>x^2 + 4</math>. EXPLAIN Kelly's mistake and give the correct answer.</p>	
<p>35. <math>(5x^2 - 7x - 4) + (2x^2 + 9x + 7) + (-8x^2 - 2x - 9)</math></p>	<p>36. Subtract: <math>(4x + y - 3) - (6x - 3y + 1)</math></p>
<p>37. Simplify: <math>6a(a^2 + 4a - 2) - 3a</math></p>	<p>38. Simplify: <math>-20 - (7m - 6)</math></p>
<p>39. Subtract <math>(5y^2 - 8y + 3)</math> from <math>(7y^2 - 3y - 4)</math></p>	<p>40. Multiply: a) <math>(2x - 3)(x + 4)</math> b) <math>(x - 6)^2</math></p>
<p>41. Multiply the following by its conjugate and express answer in standard form. a) <math>(5 - m)</math></p>	<p>42. Divide: a) <math>\frac{a + abc}{a}</math> b) <math>\frac{9x^2y - 12xy^2}{xy}</math></p>

43. Express in standard form: $5x - x^2 + 3 + x^2$ Degree of above polynomial :	44. What is the value of $5^0 + 6^{-2}$ ?
45. Simplify: a) $(-3x^5)^2$ b) $(2x^2y^3)^4$ c) $5^{-3}$ d) $6(3^{-3})$ e) $(-2x)^0$ f) $-2x^0$	46. If the expression $(2y^6)^4$ is equivalent to $16y^8$ , what is the value of $a$ ?
47. Simplify: a) $(2x^2 - 4x + 1) - 2(x^2 - 3x + 2)$ b) $(6d^8)(-8d^9)(6d)$	48. Simplify the expressions below: a) $\frac{(4x^3)^2}{2x}$ b) $5c^{-3}d^{-6}e^2 \cdot -2c^4d^2e^{-2}$ c) $\frac{a^2b^3c^5}{a^5b^2c^5}$ d) $\frac{-30x^2y^{-5}z^4}{15x^5y^4z^2}$
49. For a square whose side is $(x - 5)$ feet, find the: a) perimeter b) area	50. The side of a hexagon (6 sides) is represented by $4x - 3$ . How would you represent the perimeter of the hexagon in terms of $x$ ?

51. The lengths of the sides of a triangle are $x - y$ , $x + y$ , and $3x + y$ . Find the perimeter of the triangle in terms of $x$ and $y$ .	52. The area of a rectangle is $10x^2 - 20x$ . Find the width given the length is $5x$ .
53. The perimeter of a rectangle is represented by $24x - 8$ . If the length is represented by $3x + 5$ , how would you represent the width in terms of $x$ ?	54. Suppose you have been given this polynomial: $5b + 4b^2 - 3b^4 + 3$ a. How can you write this polynomial in standard form? b. What is the degree of the polynomial?
55. Describe and correct the error made in simplifying the product	$\frac{(2x+7)(2x-7)}{= 4x^2 - 28x - 49}$

Polynomial Extra Review #1

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- combine like terms (same variable and same exponent)
- add/subtract coefficients
- keep the base and do not change the exponents
- write all answers in standard form
- \*Standard form is when terms are written in order from greatest exponent to least exponent.

1. What is the sum of  $(8x^4 + 9x^2 - 7)$  and  $(12x^3 - 6x^2 + 8)$ ?  $8x^4 + 12x^3 - 6x^2 + 8 + 9x^2 - 7$

$$\begin{array}{r} 8x^4 + 12x^3 + 3x^2 + 1 \end{array}$$

2. Subtract  $(14x^3 + 8x^2 - 9)$  from  $(10x^3 - 4x^2 + 8x + 2)$ .

$$\begin{array}{r} 10x^3 - 4x^2 + 8x + 2 \\ - (14x^3 + 8x^2 - 9) \\ \hline -4x^3 - 12x^2 + 8x + 11 \end{array}$$

3. What is the perimeter of a square if one side is represented by  $7x + 3$ ?

$$4(7x + 3) = 28x + 12$$

To Multiply Monomials and Polynomials:

- distribute by multiplying the coefficients
- add the exponents of the like bases

4. What is the product of  $-3x^2$  and  $(7x^2 - 8x + 1)$ ?  $-21x^4 + 24x^3 - 3x^2$

$$-3x^2(7x^2 - 8x + 1) = -21x^4 + 24x^3 - 3x^2$$

5. Distribute:  $4x^2yz^4(-2xy^2z + 9x^3y - 3xyz)$

$$-8x^3y^6z^5 + 36x^5y^2z^4 - 12x^3y^2z^5$$

6. What is the product of  $(x-8)$  and  $(x+2)$ ?

$$(x-8)(x+2) = x^2 + 2x - 8x - 16 = x^2 - 6x - 16$$

7. Write the following as a trinomial:  $(2x-3)^2$

$$(2x-3)(2x-3) = 4x^2 - 6x - 6x + 9 = 4x^2 - 12x + 9$$

To Divide Monomials and Polynomials:

- if it applies, rewrite each term of the polynomial divided by the monomial
- divide the coefficients
- subtract the exponents of the like bases

8. Divide:  $\frac{14m^5n^6p^{10}}{7m^3p^2} = 2m^2n^3p^8$

9. Simplify the following:  $\frac{10x^2y^9 + 25x^3y^8 - 5x^2y}{5x^2y} = \frac{10x^2y^9}{5x^2y} + \frac{25x^3y^8}{5x^2y} - \frac{5x^2y}{5x^2y} = 2y^8 + 5xy^7 - 1$

10. If the area of a rectangle is represented by  $18d^2f^2g^2$ , and the width is represented by  $3d^2f^2g^2$ , then what is the length represented by?  $L = 6d^0f^0g^0 = 6$

$$A = L \times W$$

$$18d^2f^2g^2 = L \times 3d^2f^2g^2$$

$$L = \frac{18d^2f^2g^2}{3d^2f^2g^2} = 6$$

To Use the Power Rule:

- raise the coefficient to the power outside the parentheses
- raise each base with an exponent to that same power and multiply the exponents

11. Rewrite each of the following:

a)  $(k^8)^5$  OR  $(k^8)(k^8)(k^8)(k^8)(k^8)$   $k^{24}$

b)  $(-4h^3)^2$  OR  $(-4h^3)(-4h^3)$   $16h^6$

c)  $(-3m^2n^2p)^3$  OR  $(-3)^3(m^2)^3(n^2)^3(p)^3$   $-27m^6n^4p^3$

To Make a Negative Exponent Positive:

- Write its reciprocal (flip) and make the exponent positive

12. Rewrite the following using positive exponents:

a)  $s^{-5}$   $\frac{1}{s^5}$

b)  $(2m^3)^{-2}$   $\frac{1}{(2m^3)^2} = \frac{1}{8m^6}$

c)  $-3x^{-4}$   $-3 \cdot \frac{1}{x^4} = -\frac{3}{x^4}$

To Simplify a Non-Zero Value with a Zero Exponent:

- any non-zero value raise to the zero exponent has a value of 1
- Negative exponents go in the denominator and make the exponent positive
- Positive exponents go in the numerator
- Coefficients always go in the numerator

13. Simplify each of the following:

a)  $6x^0$   $6 \cdot 1 = 6$

b)  $\left(\frac{4}{9}\right)^0 + \left(\frac{5}{6}\right)$   $1 + \frac{5}{6} = \frac{11}{6}$

c)  $\frac{14x^3y^8}{2x^2y^9}$   $\frac{7y^{-1}}{x} = \frac{7}{xy}$

14. The expression  $(-2a^2b^3)(4ab^2)(6a^2b^2)$  is equivalent to

$-48a^6b^{10}$

15. Which expression is equivalent to  $-3x(x-4) - 2x(x+3)$ ?

$-5x^2 + 6x$

Fill in the "?" for each of the following to make the statements true.

16.  $(4k^3)^2 = 16k^6$

$[2]$

17.  $(12g^4h^8)(-3g^2h^2) = -36g^{10}h^{20}$

$[6]$

18.  $(y-3)(y+?) = y^2 + 3y - 18$

$[6]$

19.  $\frac{4d^4e^5 - 2d^8e^7}{2d^2e^2} = 2d^2e^3 - d^6e^5$

$[1]$   $[2]$

20.  $(9x^2 + 8x + 2) + (3x^2 - 7x - 1) = 12x^2 + 1x^2 + 1$

$[2]$   $[1]$

21. What is the value of  $4(xy)^0$ ?

- (1) 1 (2)  $xy$  (3) 4 (4) 0

22. The perimeter of a square is  $40x + 12$ . What is the length of one of its sides?

$\frac{40x + 12}{4} = \frac{40x}{4} + \frac{12}{4} = 10x + 3$

23. The length of a rectangle is  $(2f+5)$  ft. & the width is represented by  $(f-3)$  ft. Find:  
a) the perimeter of the rectangle

$2f+5$   
 $2f+5$   
 $f-3$   
 $f-3$   
 $4f-6$   
 $4f+4$

$(2f+5)(f-3)$   
 $2f^2 - 6f + 5f - 15$   
 $2f^2 - f - 15$

24. The expression  $\frac{-32x^8}{4x^2}$ ,  $x \neq 0$ , is equivalent to

$-8x^6$

- (1)  $8x^4$   
(2)  $-8x^4$   
(3)  $8x^6$   
(4)  $-8x^6$

25. What is the simplified form of  $3a^4b^{-2}c^3$ ?

$\frac{3a^4c^3}{b^2}$

- (1)  $\frac{81a^4c^3}{b^2}$  (3)  $\frac{3a^4}{b^2c^3}$   
(2)  $\frac{81a^4}{b^2c^3}$  (4)  $\frac{3a^4c^3}{b^2}$

26. What is the product of  $2r^2 - 5$  and  $3r$ ?

- (1)  $6r^3 - 15r$  (2)  $6r^2 - 15r$   
(3)  $6r^3 - 5$  (4)  $6r^2 - 15$
- $3r(2r^2 - 5)$   
 $6r^3 - 15r$

27. Which of the following is equal to  $\frac{x^2y + y^2}{-y}$ ?

- (1)  $-x^2 - y$  (2)  $-x^2 + y^2$   
(3)  $x^2 + y$  (4)  $x^2 + y^2$
- $\frac{x^2y}{-y} + \frac{y^2}{-y}$   
 $-x^2 + -y$

28. Which expression is equivalent to  $x^{-1} \cdot y^2$ ?

- (1)  $xy^2$  (3)  $\frac{x}{y^2}$   
(2)  $\frac{y^2}{x}$  (4)  $xy^{-2}$
- $\frac{1}{x} \cdot y^2$   
 $\frac{y^2}{x}$

29.  $(-2x^2)^3 =$

- (1)  $-2x^2$  (2)  $-8x^5$   
(3)  $-8x^4$  (4)  $-6x^5$
- $(-2)^3 (x^2)^3$   
 $-8x^4$

30. For a photo at a family reunion, 8gh people arranged in 4h rows, with an equal number of people in each row. Which expression represents the number of people in one row of the photograph?

- (1)  $2g$   
 (2)  $4g$   
 (3)  $12gh^2$   
 (4)  $32gh^2$

$$\frac{8gh}{4h} = 2g$$

31. Which expression represents  $\frac{(2x^3)(8x^5)}{4x^6} = \frac{16x^8}{4x^6}$

- (1)  $x^2$   
 (2)  $4x^2$   
 (3)  $4x^9$   
 (4)  $4x^{21}$

$$4x^2$$

32. A pizza shop owner is monitoring the amount of cheese he uses each week. The polynomials below model the pounds of cheese ordered in the past, where  $p$  represents pounds.

Mozzarella:  $3p^2 - 6p + 14p + 125$

Cheddar:  $12.5p^2 + 18p + 75$

Write a polynomial that models the total number of pounds of cheese ordered.

$$3p^3 + 6.5p^2 + 32p + 200$$

33. The length of a rectangle is  $(4x + 5)$  and the width of a rectangle is  $(x + 1)$ .

a) Find the perimeter of the rectangle.

$$4x + 5$$

$$4x + 5$$

$$x + 1$$

$$x + 1$$

$$+ \quad +$$

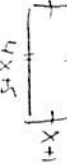
$$\frac{10x + 12}{\phantom{10x + 12}}$$

b) Find the area of the rectangle

$$(4x + 5)(x + 1)$$

$$4x^2 + 4x + 5x + 5$$

$$4x^2 + 9x + 5$$



34. Kelly simplified  $(x + 2)^2$  and got  $x^2 + 4$ . EXPLAIN Kelly's mistake and give the correct answer.

Kelly just squared  $x$  and  $2$  instead of using the distributive property. She should have done:  $(x + 2)^2 = (x + 2)(x + 2)$

$$x^2 + 2x + 2x + 4$$

$$x^2 + 4x + 4$$

35.  $(5x^2 - 7x - 4) + (2x^2 + 9x + 7) + (-8x^2 - 2x - 9)$

$$\left. \begin{array}{l} 5x^2 + 9x + 7 \\ + (-8x^2 - 2x - 9) \\ -x^2 - 6 \end{array} \right\}$$

$$-x^2 - 6$$

36. Subtract:  $(4x + y - 3) - (6x - 3y + 1)$

$$\left. \begin{array}{l} 4x + y - 3 \\ + (-6x + 3y - 1) \\ -2x + 4y - 4 \end{array} \right\}$$

$$-2x + 4y - 4$$

37. Simplify:  $6a(a^2 + 4a - 2) - 3a$

$$6a^3 + 24a^2 - 12a - 3a$$

$$6a^3 + 24a^2 - 15a$$

38. Simplify:  $-20 - (7m - 6)$

$$-20 - 7m + 6$$

$$-7m - 14$$

39. Subtract  $(5y^2 - 8y + 3)$  from  $(7y^2 - 3y - 4)$

$$(7y^2 - 3y - 4)$$

$$+ (-5y^2 + 8y + 3)$$

$$2y^2 + 5y - 7$$

40. Multiply:  $(2x - 3)(x + 4)$

$$2x^2 + 8x - 3x - 12$$

$$2x^2 + 5x - 12$$

b)  $(x - 6)^2 = (x - 6)(x - 6)$

$$x^2 - 6x - 6x + 36$$

$$x^2 - 12x + 36$$

41. Multiply the following by its conjugate and express answer in standard form.

a)  $(5 - m)(5 + m)$

$$25 + 5m - 5m - m^2$$

$$25 - m^2$$

42. Divide:  $\frac{a + abc}{a} = \frac{a}{a} + \frac{abc}{a}$

$$\frac{9x^2y - 12xy^2}{xy} = \frac{9x^2y}{xy} - \frac{12xy^2}{xy}$$

$$9x - 12y$$

<p>43. Express in standard form: <math>5x - x^2 + 3 + x^2</math></p> <p>Degree of above polynomial: <math>\boxed{2}</math></p> <p><math>x^2</math> leading coefficient: <math>\boxed{1}</math></p> <p><math>x^2 - x^2 + 5x + 3</math></p>	<p>44. What is the value of <math>5^0 + 6^{-2}</math>?</p> <p><math>1 + \frac{1}{36}</math></p> <p><math>\frac{37}{36}</math></p>
<p>45. Simplify:</p> <p>a) <math>(-3x^5)^2</math></p> <p><math>(-3)^2 (x^5)^2</math></p> <p><math>9x^{10}</math></p> <p>b) <math>(2x^2y^3)^4</math></p> <p><math>(2)^4 (x^2)^4 (y^3)^4</math></p> <p><math>16x^8y^{12}</math></p> <p>c) <math>5^{-3}</math></p> <p><math>\frac{1}{5^3} = \frac{1}{125}</math></p> <p>d) <math>6(3^3)</math></p> <p><math>6 \cdot 3^3 = 6 \cdot 27 = 162</math></p> <p>e) <math>(-2x)^0</math></p> <p><math>\boxed{1}</math></p> <p>f) <math>-2x^6</math></p> <p><math>-2 \cdot 1 = -2</math></p>	<p>46. If the expression <math>(2y^a)^4</math> is equivalent to <math>16y^8</math>, what is the value of <math>a</math>?</p> <p><math>a = 2</math></p> <p><math>(4x^3)(4x^3) = 16x^6 = 8x^5</math></p>
<p>47. Simplify:</p> <p>a) <math>(2x^2 - 4x + 1) - 2(x^2 - 3x + 2)</math></p> <p><math>2x^2 - 4x + 1 - 2x^2 + 6x - 4</math></p> <p><math>2x^2 - 2x^2 - 4x + 6x + 1 - 4 = 2x - 3</math></p> <p>b) <math>(6d^8)(-8d^9)(6d)</math></p> <p><math>\boxed{-288d^{18}}</math></p>	<p>48. Simplify the expressions below:</p> <p>a) <math>(4x^3)^2 = \frac{(4)^2 (x^3)^2}{2x} = \frac{16x^6}{2x} = 8x^5</math></p> <p>b) <math>5c^{-3}d^{-6}e^2 \cdot 2c^4d^2e^{-2} = 10c^{-3+4}d^{-6+2}e^{2-2} = 10c^1d^{-4}e^0 = \frac{10c}{d^4}</math></p> <p>c) <math>\frac{a^2b^3c^9}{a^5b^2e^5} = a^{-3}b^{-1}c^7 = \frac{b^1}{a^3} \frac{c^7}{1}</math></p> <p>d) <math>\frac{-30x^2y^{-5}z^4}{15x^5y^4z^2} = -2x^{-3}y^{-9}z^2 = -\frac{2z^2}{x^3y^9}</math></p>
<p>49. For a square whose side is <math>(x-5)</math> feet, find the:</p> <p>a) perimeter</p> <p><math>4(x-5)</math></p> <p><math>4x - 20</math></p> <p>b) area</p> <p><math>A = s^2</math></p> <p><math>A = (x-5)^2</math></p> <p><math>(x-5)(x-5)</math></p> <p><math>x^2 - 5x - 5x + 25</math></p> <p><math>x^2 - 10x + 25</math></p>	<p>50. The side of a hexagon (6 sides) is represented by <math>4x - 3</math>. How would you represent the perimeter of the hexagon in terms of <math>x</math>?</p> <p><math>6(4x-3)</math></p> <p><math>24x - 18</math></p>

<p>51. The lengths of the sides of a triangle are <math>x - y</math>, <math>x + y</math>, and <math>3x + y</math>. Find the perimeter of the triangle in terms of <math>x</math> and <math>y</math>.</p> <p><math>x - y + x + y + 3x + y</math></p> <p><math>5x + y</math></p>	<p>52. The area of a rectangle is <math>10x^2 - 20x</math>. Find the width given the length is <math>5x</math>.</p> <p><math>A = L \cdot W</math></p> <p><math>\frac{10x^2 - 20x}{5x} = \frac{5x \cdot 2x}{5x}</math></p> <p><math>2x - 4 = W</math></p>
<p>53. The perimeter of a rectangle is represented by <math>24x - 8</math>. If the length is represented by <math>3x + 5</math>, how would you represent the width in terms of <math>x</math>?</p> <p><math>P = 2L + 2W</math></p> <p><math>24x - 8 = 2(3x + 5) + 2W</math></p> <p><math>24x - 8 = 6x + 10 + 2W</math></p> <p><math>-6x - 10 = -6x - 10 + 2W</math></p> <p><math>\frac{14x - 18}{2} = \frac{2W}{2}</math></p> <p><math>W = 9x - 9</math></p>	<p>54. Suppose you have been given this polynomial:</p> <p>a. How can you write this polynomial in standard form?</p> <p><math>-3b^4 + 4b^2 + 5b + 3</math></p> <p>b. What is the degree of the polynomial?</p> <p><math>\boxed{4}</math></p>
<p>55. Describe and correct the error made in simplifying the product</p> <p><math>(2x + 7)(2x - 7)</math></p> <p><math>4x^2 - 14x + 14x - 49</math></p> <p><math>4x^2 - 49</math></p> <p>Error: They combined <math>-14x + 14x</math> to get <math>-28x</math></p>	<p><math>(2x + 7)(2x - 7)</math></p> <p><math>= 4x^2 - 28x - 49</math></p>