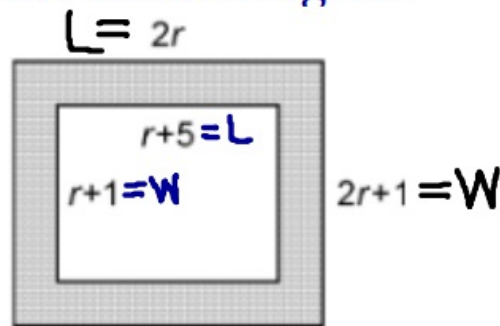


Warm Up

February 27, 2019

1.) Find the area of the shaded region.



$$\begin{aligned} \text{Area}_{\text{shaded}} &= \text{Area}_{\text{big}} - \text{Area}_{\text{small}} \\ (2r)(2r+1) &- (r+1)(r+5) \\ 4r^2 + 2r &- (r^2 + 6r + 5) \\ 4r^2 + 2r - r^2 - 6r - 5 & \\ 3r^2 - 4r - 5 & \end{aligned}$$

2.) The perimeter of a triangle is $14x - 4$. If the two sides measure $3x - 2$ and $5x + 3$, what is the length of the third side? $\rightarrow y$

$$\begin{aligned} (3x - 2) + (5x + 3) + y &= 14x - 4 \\ 8x + 1 + y &= 14x - 4 \\ y &= 14x - 4 - (8x + 1) \\ &= 14x - 4 - 8x - 1 \\ y &= 6x - 5 \end{aligned}$$



Simplify the following completely:

$$\left(\frac{(2x^4y^{-3})^{-2} \cdot (2x^{-1}y^{-2})^4}{2x^{-7}y^{-3}} \right)^3$$

$$\frac{1}{2^2} = \frac{1}{4}$$

$$\left(\frac{(2)^{-2} (x^4)^{-2} (y^{-3})^{-2} \cdot (2)^4 (x^{-1})^4 (y^{-2})^4}{2x^{-7}y^{-3}} \right)^3$$

$$\left(\frac{\frac{1}{4} x^{-8} y^6 \cdot 16 x^{-4} y^{-8}}{2x^{-7}y^{-3}} \right)^3$$

$$\left(\frac{4x^{-12}y^{-2}}{2x^{-7}y^{-3}} \right)^3$$

$$\begin{aligned} -12 - (-7) \\ -2 - (-3) \end{aligned}$$

$$(2x^{-5}y)^3$$

$$(2)^3 (x^{-5})^3 (y^1)^3$$

$$8x^{-15}y^3$$

$$\frac{8y^3}{x^{15}}$$

Exponent Rules

Graphic Organizer

<p>QUOTIENT RULE</p>	$\frac{x^a}{x^b} = x^{a-b}$	<p>1. $\frac{27x^5}{42x} = \frac{9}{14}x^4$</p> <p>2. $\frac{(y^2)^2}{y^4} = \frac{y^4}{y^4} = 1$</p>
<p>NEGATIVE EXPONENT RULE</p>	$x^{-a} = \frac{1}{x^a}$	<p>1. $-5x^{-2} = \frac{5}{x^2}$</p> <p>2. $\frac{4k^2}{8k^5} = \frac{1}{2k^3}$</p>
<p>ZERO EXPONENT RULE</p>	$x^0 = 1$	<p>1. $7x^0 = 7(1) = 7$</p> <p>2. $\frac{(w^4)^2}{w^8} = \frac{w^8}{w^8} = 1$</p>

$$w^{8-8} = w^0$$

Dividing Polynomials by a Monomial

Recall the Quotient Rule: $\frac{x^a}{x^b} =$

*To divide a polynomial by a monomial,
divide each term of the numerator by the term in the denominator.*

4. $\frac{6x+9}{3}$

$$\frac{6x}{3} + \frac{9}{3}$$

$$2x + 3$$

5. $\frac{40x^2 - 8x}{8}$

$$\frac{40x^2}{8} - \frac{8x}{8}$$

$$5x^2 - x$$

6. $\frac{7n^2 + 4n}{n}$

$$\frac{7n^2}{n} + \frac{4n}{n}$$

$$7n + 4$$

7. $\frac{12x^3 + 15x}{3x^2}$

$$\frac{12x^3}{3x^2} + \frac{15x}{3x^2}$$

$$4x + 5x^{-1}$$

$$4x + \frac{5}{x}$$

8. $\frac{10v^2 + 5v - 15}{5}$

$$\frac{10v^2}{5} + \frac{5v}{5} - \frac{15}{5}$$

$$2v^2 + v - 3$$

9. $\frac{18c^3 - 21c^2 + 3c}{3c}$

$$6c^2 - 7c + 1$$

13. $\frac{14x^6y^3 - 49x^5y^9}{-7x^4y}$

14. $\frac{-25x^4y^3 + 30x^2y^5}{-5x^2y}$

15. $\frac{20a^7b^3c^2 - 5abc}{5abc}$

$$\frac{20a^7b^3c^2}{5abc} - \frac{5abc}{5abc}$$

$$4a^6b^2c - 1$$

$$16. \frac{16x^6 - 12x^4 + 4x^2}{4x^2}$$

$$17. \frac{12c^5d^4 + 18c^4d^3}{3c^2d^3}$$

$$18. \frac{-24x^7 + 9x^3 - 15x}{3x^5}$$

$$\frac{12c^5d^4}{3c^2d^3} + \frac{18c^4d^3}{3c^2d^3}$$
$$4c^3d + 6c^2$$

$$19. \frac{15x^5 - 25x^3 + 5x^2}{5x^4}$$

$$20. \frac{28x^5y^4z^3 + 8x^4y^3z^2}{4x^2y^2z^2}$$

$$21. \frac{30c^5d^9 - 12c^4d^8 + 3c^3d^7}{3c^2d^2}$$