Name_____

Section 2.5

Algebra II: Polynomials Divided by Monomials

Essential Question:

How do I divide a polynomial by a monomial?

Answer: very carefully

See Khan Academy

Examples:

1) $\dfrac{20+3}{4} = \boxed{\dfrac{20}{4}} + \dfrac{3}{4}$

$5 + 3/4$ or $\boxed{5\,^3/_4}$

2) $\dfrac{3a + 3b}{3} = \dfrac{3a}{3} + \dfrac{3b}{3}$

$\boxed{a + b}$

3) $\dfrac{2rs - 6r^2s^2}{2r}$

$= \dfrac{2rs}{2r} - \dfrac{6rss}{2r}$

$= \boxed{s - 3rs^2}$

4) $\dfrac{2x^2 + 4x + 8xy}{2x}$

$= \dfrac{2xx}{2x} + \dfrac{4x}{2x} - \dfrac{8xy}{2x}$

$\boxed{x + 2 - 4y}$

<u>Class Practice</u> —on board

① $\dfrac{5x+5y}{5}$

$\dfrac{5x}{5} + \dfrac{5y}{5}$

$\boxed{= x + y}$

② $\dfrac{2x+3x}{x}$

③ $\dfrac{8ab - 4a}{2a}$

$\boxed{\dfrac{8ab}{2a}} \boxed{\dfrac{4a}{2a}}$

$4b - 2a$

④ $\dfrac{10xy + 15x}{5x}$

Turn over for more class practice.

Try

(5) $\dfrac{2x^2 + 3x - 4xy}{x}$

$\dfrac{2x\cancel{x}}{\cancel{x}} + \dfrac{3x}{\cancel{x}} - \dfrac{4\cancel{x}y}{\cancel{x}}$

$\boxed{2x + 3 - 4y}$

(6) $\dfrac{3a^2b - 6a + 9a^2}{3a}$

one more

$\dfrac{-2ab + 4db^2 - 6a^3}{-2a}$

$\dfrac{-2ab}{-2a} + \boxed{\dfrac{4abb}{-2a}} - \boxed{\dfrac{6aaa}{-2a}}$

$b + -2ab^2 - (-3)a^2$

or

$b + 2ab^2 + 3a^2$

Assignment

Name_____

Polynomials divided by Monomials.

1) $\dfrac{5a+15b}{5}$

2) $\dfrac{7a-7b}{7}$

3) $\dfrac{3a+12c}{3}$

4) $\dfrac{8x-4y}{2}$

5) $\dfrac{49m+28n}{7}$

6) $\dfrac{42x+30y}{6}$

7) $\dfrac{6x^2-48x}{6x}$

8) $\dfrac{ab^2-a^2b}{a}$

9) $\dfrac{a^3+a^2+ab^2}{a}$

10) $\dfrac{x^3+3x^2-x}{x}$

11) $\dfrac{3n^4+3n^3-6n^2}{3n}$

12) $\dfrac{5x^2-15x^3y+10x}{5x}$

13) $\dfrac{6r^2s+9rs^2-18r^3}{3r}$

14) $\dfrac{n^2-3n^3+5n^5}{n^2}$

15) $\dfrac{4x^4+12x^3-44x^2+8x}{4x}$