

TOPIC: Fractions
slope, simplifying
and factoring

Date: 8/29

Questions
Key ideas

Adding and
Subtracting
Fraction

ES: -----

Notes:

(ex1) $\frac{1}{3} + 1 =$

$$\frac{1}{3} + \frac{3}{3} = \left(\frac{4}{3}\right)$$

(ex2) $\frac{1}{3} - 1 =$

$$\frac{1}{3} - \frac{3}{3} = \left(-\frac{2}{3}\right)$$

(ex3) $\left(\frac{2}{2}\right)\frac{1}{3} + \frac{1}{2}\left(\frac{3}{3}\right) = \frac{2}{6} + \frac{3}{6}$
 $= \left(\frac{5}{6}\right)$

Slope
Formula

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

(ex1) $(2, 1) (1, 3)$
 $x_1 \ y_1 \ x_2 \ y_2$

$$m = \frac{3 - 1}{1 - 2} = \left(\frac{2}{-1}\right)$$

Factoring

(ex1) $4x^2 + 8x =$
 $4x(x + 2)$

Solving
Quadratics
by Factoring

(ex2) $x^2 + 9x + 20 = 0$

| | | |
|---|----------------|----|
| 5 | 5x | 20 |
| x | x ² | 4x |
| | x | 4 |

$$\begin{array}{cc} \cancel{20x^2} & \\ 5x & \cancel{4x} \\ \hline & 9x \end{array}$$

| |
|-------|
| a · b |
| a × b |
| a + b |

$$(x+5)(x+4) = 0$$

$$x+5=0$$

-5 -5

$$x = -5$$

$$x+4=0$$

-4 -4

$$x = -4$$

Simplifying exponents

Laws of exponents

$$\textcircled{1} \frac{x^a}{x^b} = x^{a-b} \quad \textcircled{2} x^a x^b = x^{a+b}$$

$$\textcircled{3} (x^a)^b = x^{a \cdot b}$$

Summary