Name Notes Date

**Algebra II Review Notes**

**Essential Question:** How do I combine like terms, and add fractions.

**Terminology**

Like Terms: – Terms that look alike. 7X and 10X

16 $m^2$ and 30 $m^2$

NOT 6X, $X^2$

Simplify: –

make the problem simple - put into it's smallest form

**Simplify by combining like terms.**

1. $8m - 5m + 6$

$3m + 6$

2. $9x + 4xy + 3x$

$12x - 4xy$

3. $5x + 4y + 9x - 3y$

$14x - 7y$

**Add or Subtract. Write each answer in simplest form (as a fraction)**

1. $\frac{1}{4} + \frac{6}{4} = \frac{7}{4}$

2. $\frac{3}{8} - \frac{1}{4}\left(\frac{2}{2}\right)$

$\frac{3}{8} - \frac{2}{8} = \frac{1}{8}$

3. $\left(\frac{3}{3}\right)\frac{9}{4} - \frac{1}{6}\left(\frac{2}{2}\right)$

$\frac{27}{12} - \frac{2}{12} = \frac{25}{12}$

**Summary:**

1) You must have a common denominator to add fractions

2) TO combine like terms - combine matching variables like $x^2$ and $3x^2$

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## FRACTION ADDITION #3

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**Directions**: Find the sum of the following fractions. First, find a common denominator. Second, write the equivalent fractions in the space provided. Finally, write your answer in the space provided.

Example: $\frac{1}{6}+\frac{2}{5} = \frac{5}{30}+\frac{12}{30} = \frac{17}{30}$

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| | Original Problem | Equivalent Fractions | Final Answer |
|---|---|---|---|
| 1) | $\frac{5}{8} + \frac{1}{7} =$ | | _____ |
| 2) | $\frac{3}{5} + \frac{1}{3} =$ | | _____ |
| 3) | $\frac{3}{10} + \frac{2}{7} =$ | | _____ |
| 4) | $\frac{2}{9} + \frac{3}{5} =$ | | _____ |
| 5) | $\frac{1}{2} + \frac{1}{3} =$ | | _____ |
| 6) | $\frac{2}{5} + \frac{4}{7} =$ | | _____ |
| 7) | ~~$\frac{5}{9} + \frac{0}{7}$~~ $=$ | | _____ |
| 8) | $\left(\frac{11}{11}\right)\frac{2}{5} + \frac{6}{11}\left(\frac{5}{5}\right) =$ | $\frac{22}{55} + \frac{30}{55} = \frac{52}{55}$ | $\frac{52}{55}$ |
| 9) | $\frac{1}{6} + \frac{3}{7} =$ | | _____ |
| 10) | $\frac{1}{2} + \frac{1}{9} =$ | | _____ |

Name_____

## SIMPLIFYING EXPRESSIONS #1

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**Directions**: For each expression below, simplify the expression by combining *like terms*. Any two terms can be added/subtracted as long as they contain the same variable(s) and the same exponents. Terms that have different variables or exponents must be kept separated. Write the simplified expression on the line provided.

Examples: $5x+2y+8x=$ $13x+2y$ $5x^2+2y+8x+2x^2=$ $7x^2+8x+2y$

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1) $13x+3y+2x=$ _____

2) $4x^2+3y+5x+6x^2=$ _____

3) $7y+4y+5x=$ _____

4) $2y^2+6y+4y+10y^2=$ _____

5) $9x+y-3x=$ _____

6) $x^2+8y-4y+8x^2=$ _____

7) $17x-5x+3y-y+2x=$ _____

8) $2y^2+2y+2y+2x^2=$ _____

9) $21x+4y-5x=$ _____

10) $13x^2+3y+x+6x^2=$ _____