

WATKINS MILL HS
SUMMER REVIEW PACKET
ALGEBRA 2
& HONORS ALGEBRA 2
DUE 3rd DAY OF CLASS
IN AUGUST

Name: _____

Summer Review Assignment

This assignment is a review of skills you should have learned that will be needed to be successful in math next year. Answer all questions and SHOW ALL WORK (attach extra paper if needed). The reminders and examples on many of the sections to help you.

A. Solving linear equations

1. $-4(3 - x) = 2(x + 6)$

2. $2(3x + 6) + 8 = 6x$

3. $3x - 2(x + 1) = 0$

4. $3(x + 2) + 1 = 2x + 7 + x$

B. Factor completely

Remember – first, look for a GCF (greatest common factor) , then factor difference of squares or factor trinomials

Examples : $3x^3 - 48x = 3x(x^2 - 16) = 3x(x + 4)(x - 4)$
 $x^2 + 2x - 15 = (x + 5)(x - 3)$

1. $5x - 20$

5. $x^2 - x - 72$

2. $7x^3 - 14x^2$

6. $25x^2 - 81y^2$

3. $a^2 + 16a + 64$

7. $2x^2 + 9x - 5$

4. $x^2 - 49$

C. Solve each quadratic equation, either by factoring or by quadratic formula – remember to get = 0

Ex: Solve by factoring: $x^2 - 9x = -14$

$$x^2 - 9x = 14$$

$$x^2 - 9x - 14 = 0$$

$$(x - 7)(x - 2) = 0$$

$$x - 7 = 0 \quad \text{or} \quad x - 2 = 0$$

$$x = 7 \quad x = 2$$

$$\{2, 7\}$$

Solve by quadratic formula: $x^2 - 3x - 8 = 0$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{-(-3) \pm \sqrt{(-3)^2 - 4(1)(-8)}}{2(1)}$$

$$x = \frac{3 \pm \sqrt{9 + 32}}{2}$$

$$x = \frac{3 \pm \sqrt{41}}{2}$$

1. $x^2 - 6x = 0$

5. $2y^2 - 3y - 2 = 0$

2. $x^2 - 3x = 10$

3. $(2a + 1)(a + 3) = 0$

6. $x^2 + 5x - 1 = 0$

4. $x^2 = 16$

D. Simplify each completely:

$$\text{Ex1: } (3x - 5) - (x - 8) = 2x + 3$$

$$\text{Ex2: } (3x - 5)(4x + 1) = 12x^2 + 3x - 20x - 5 = 12x^2 - 17x - 5 \quad (\text{foil !})$$

$$\text{Ex3: } 2x^2(3x^3 - 5x + 1) = 6x^5 - 10x^3 + 2x^2$$

$$\text{Ex4: } \frac{4x^2y^3 - 10xy^5}{2xy^2} = 2xy - 5y^3$$

$$1. \quad (-3x^2 + 4x - 7) + (2x^2 - 7x + 8)$$

$$2. \quad (39a^4 - 4a^3 + 2a^2 - a - 7) - (10a^4 + 3a^3 - 2a^2 - a + 8)$$

$$3. \quad (15a^4b^2c)^0$$

$$4. \quad (8a^3b^2)(2a^{-4}b^{-5})$$

$$5. \quad (3x + 7)(2x - 5)$$

$$6. \quad (2x - 3)(3x^2 + x - 1)$$

$$7. \quad \frac{64x^3y^2 - 16x^2y^3 + 32x^5y^5}{8x^2y^2}$$

E. Simplify each completely – do not use decimals

$$\text{Examples: } \sqrt{40} = \sqrt{4 \cdot 10} = 2\sqrt{10}$$

$$\sqrt{\frac{5}{6}} = \sqrt{\frac{5}{6}} \cdot \sqrt{\frac{6}{6}} = \sqrt{\frac{30}{36}} = \frac{\sqrt{30}}{6}$$

$$\sqrt{15} \cdot \sqrt{35} = 5\sqrt{21}$$

$$1. \quad \sqrt{32}$$

$$5. \quad \sqrt{\frac{3}{4}}$$

$$2. \quad \sqrt{48xy^5}$$

$$6. \quad \sqrt{\frac{3}{2}}$$

$$3. \quad \sqrt{8} + \sqrt{18} - \sqrt{32}$$

$$4. \quad \sqrt{71} \cdot \sqrt{14}$$

$$7. \quad \sqrt{16a^3b^2}$$

F. Simplify each – remember to get a common denominator when adding or subtracting

1. $\frac{3}{7} \cdot \frac{14}{15}$

2. $\frac{3}{7} + \frac{14}{15}$

3. $\frac{9}{10} \div \frac{3}{5}$