Student: _____ **Instructor:** Alyson Muff **Assignment:** Midterm Math012 Spring 2016
Date: _____ **Course:** Intermediate Algebra

1. Add.

$(9y^2 + y - 8) + (5y^2 - y - 9)$

$(9y^2 + y - 8) + (5y^2 - y - 9) =$ ☐
(Simplify your answer.)

ID: 5.3.35

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2. Perform the indicated operation.

Subtract $(x^2 - 2x)$ from $(-x^2 - 12x)$.

The difference between the two polynomials is ☐.
(Simplify your answer. Do not factor.)

ID: 5.3.47

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3. Subtract $(2x + 8)$ from the sum of $(6x^2 + 3x + 9)$ and $(4x^2 + 4x - 8)$.

The answer is ☐. (Simplify your answer. Do not factor.)

ID: 5.3.77

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4. Multiply, using special product methods.

$[8 + (2b + 2)]^2$

$[8 + (2b + 2)]^2 =$ ☐ (Simplify your answer.)

ID: 5.4.39

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5. Multiply, using special product methods.

$[(-3s - 5) + 8][(-3s - 5) - 8]$

$[(-3s - 5) + 8][(-3s - 5) - 8] =$ ☐ (Combine like terms.)

ID: 5.4.41

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6. Factor out the greatest common factor from the following polynomial.

$10b^3 + 2b^2 + 1$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- ○ **A.** $10b^3 + 2b^2 + 1 =$ _____ (Factor completely.)
- ○ **B.** The polynomial has no common factor other than 1.

ID: 5.5.23

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7. Factor the following polynomial.

$x^3 - x^2 - 12x + 12$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- ○ **A.** $x^3 - x^2 - 12x + 12 =$ _____ (Factor completely.)
- ○ **B.** The polynomial has no common factor other than 1.

ID: 5.5.69

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8. Factor completely.

$64x^3 + 125y^3$

Select the correct choice below and fill in any answer boxes within your choice.

- **A.** $64x^3 + 125y^3 =$ _____
- **B.** The polynomial is prime.

ID: 5.7.49

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9. Factor completely.

$(y + z)^3 + 27$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- **A.** $(y + z)^3 + 27 =$ _____ (Simplify your answer.)
- **B.** $(y + z)^3 + 27$ is prime.

ID: 5.7.65

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10. Factor the following.

$27a^4b^3 + 64a^7$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- **A.** $27a^4b^3 + 64a^7 =$ _____
- **B.** $27a^4b^3 + 64a^7$ is prime.

ID: 5.7.35

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11. Use the quotient rule to simplify.

$$\frac{20x^4y^5}{4x^2y^3}$$

$\frac{20x^4y^5}{4x^2y^3} =$ [ ]
(Type your answer using exponential notation.)

ID: 5.1.31

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12. Write the following number in scientific notation.

11,320,000

11,320,000 = [ ]
(Use the multiplication symbol in the math palette as needed.)

ID: 5.1.99

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13. Simplify. Use positive exponents for any variables.

$-3x^4 \cdot 2x^7$

$-3x^4 \cdot 2x^7 =$ [ ]

ID: 5.1.55

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14. Factor the following.

$(x+9y)^2-4$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- **A.** $(x+9y)^2-4=$ _____
- **B.** $(x+9y)^2-4$ is prime.

ID: 5.7.21

15. Factor the following.

$x^2+8x+16-y^2$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- **A.** $x^2+8x+16-y^2=$ _____
- **B.** $x^2+8x+16-y^2$ is prime.

ID: 5.7.23