POLYNOMIALS! REVIEW QUESTIONS

Part I Questions:

- 1. Which of the following is the value of the polynomial $4x^3 + 2x^2 + 3x + 7$ when x = 10?
 - (1) 3,782
- (3) 4,237
- (2) 1,298
- (4) 743
- 2. Which of the following is a polynomial expression?
 - (1) $2^x + x + 3$
- (3) $\frac{1}{x} + \frac{1}{x^2} + \frac{1}{r^3}$
- (2) $x^2 + 2x + 7$
- (4) $\sqrt{x} + 10$
- 3. What is the sum of the polynomials $8x^2 7x + 3$ and $2x^2 + 10x 5$?
 - (1) $10x^2 + 3x 2$
- (3) $6x^2 + 17x 8$
- (2) $16x^2 70x 15$ (4) $10x^4 + 3x^2 2$
- 4. The product of the monomial $-2x^3$ with the binomial $4x^2-2$ is equivalent to
 - $(1) -6x^6 4x^3$
- (3) $2x^5 4x^3$
- $(2) -8x^6 + 4x^3$
- $(4) -8x^5 + 4x^3$
- 5. If the length of a rectangle is represented by x+8 and its width is represented by 2x+3 then its area could be expressed as which of the following polynomials?
 - (1) $2x^2 + 24$
- (3) $2x^2 + 19x + 24$
- (2) 2x+11
- (4) $2x^2 + 11x + 16$
- 6. Which of the polynomials results from squaring the binomial x-4?
 - (1) $x^2 + 16$
- (3) $x^2 8x 16$
- (2) $x^2 16$
- (4) $x^2 8x + 16$

7. Which of the following expressions is equivalent to

$$(x+5)(x-5)+(x+2)(x-2)$$

- (1) $2x^2 29$ (3) $x^2 3x 50$
- (2) $x^2 + 50$ (4) $2x^2 13x + 29$
- 8. Which of the following is the greatest common factor of the monomials $10x^2y^5$ and $15xy^3$?
 - (1) 5xy

- (3) $25x^3y^8$
- (2) $25x^2y^{15}$
- (4) $5xy^3$
- 9. Which of the following shows the binomial $10x^3 + 40x$ factored incorrectly?

 - (1) $10(x^3+4x)$ (3) $10x(x^2+4)$

 - (2) $5x^2(2x+8)$ (4) $5x(2x^2+8)$
- 10. Which of the following is *not* a factor of the binomial $7x^2 28x$?
 - (1) x-4
- (3) 7

(2) x

- (4) -4
- 11. The binomial $x^2 64$ can be written equivalently as

 - (1) (x-8)(x-8) (3) (x-4)(x+16)

 - (2) (x+8)(x-8) (4) (x+4)(x-16)
- 12. The trinomial $2x^2-3x-20$ can be factored as the product of x-4 and which of the following binomials?
 - (1) 2x+5
- (3) x-5
- (2) 2x-7
- (4) x+5

Free Response Questions

13. Find the difference when the polynomial $-5x^2 + 3x + 8$ is subtracted from the polynomial $2x^2 + 4x + 1$.

- 14. Consider the product of (x+2)(x+3)
 - (a) Write this product in simplest trinomial form.
 - (b) Test the equivalency of your expression in part (a) with the value x = 4.

15. Write the product below in standard polynomial form. Show the steps that you use in simplifying the product.

$$(x+8)(x-3)(2x+1)$$

16. Completely factor each of the following expressions.

(a)
$$x^2 - 16$$

(b)
$$3x^3 - 75x$$

(c)
$$x^2 + 8x + 16$$

(d)
$$9x^2 - 64$$

(e)
$$x^2 - 12x - 28$$

(f)
$$x^2 - 10x + 25$$