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## POLYNOMIALS! REVIEW QUESTIONS

## Part I Questions:

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

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

(1) $2 x^{2}-29$
(3) $x^{2}-3 x-50$
(2) $x^{2}+50$
(4) $2 x^{2}-13 x+29$
8. Which of the following is the greatest common factor of the monomials $10 x^{2} y^{5}$ and $15 x y^{3}$ ?
(1) $5 x y$
(3) $25 x^{3} y^{8}$
(2) $25 x^{2} y^{15}$
(4) $5 x y^{3}$
9. Which of the following shows the binomial $10 x^{3}+40 x$ factored incorrectly?
(1) $10\left(x^{3}+4 x\right)$
(3) $10 x\left(x^{2}+4\right)$
(2) $5 x^{2}(2 x+8)$
(4) $5 x\left(2 x^{2}+8\right)$
10. Which of the following is not a factor of the binomial $7 x^{2}-28 x$ ?
(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 $2 x^{2}-3 x-20$ can be factored as the product of $x-4$ and which of the following binomials?
(1) $2 x+5$
(3) $x-5$
(2) $2 x-7$
(4) $x+5$

## Free Response Questions

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

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

16. Completely factor each of the following expressions.
(a) $x^{2}-16$
(b) $3 x^{3}-75 x$
(c) $x^{2}+8 x+16$
(d) $9 x^{2}-64$
(e) $x^{2}-12 x-28$
(f) $x^{2}-10 x+25$
