

Name:

Date:

Period:

1. Identify the greatest common factor for each of the following sets of monomials.

[a] $6x^2$ and $24x^3$

[b] $15x$ and $10x^2$

[c] $24x^4$ and $10x^2$

[d] $2x^3$, $6x^2$ and $12x$

[e] $16t^2$, $48t$ and 80

[f] $8t^5$, $12t^3$ and $16t$

2. Which of the following is the greatest common factor of the terms $36x^2y^4$ and $24xy^7$?

[a] $12xy^4$

[b] $24x^2y^7$

[c] $6x^2y^3$

[d] $3xy$

3. Write each of the following as equivalent products of the polynomial's greatest common factor with another polynomial (of the same number of terms). The first is done as an example.

[a] $8x - 28$

[b] $50x + 30$

[c] $24x^2 + 32x$

[d] $18 - 12x$

$4(2x - 7)$

[e] $6x^3 + 12x^2 - 3x$

[f] $x^2 - x$

[g] $10x^2 + 35x - 20$

[h] $21x^3 - 14x$

[i] $36x - 8x^2$

[j] $30x^3 - 75x^2$

[k] $-16t^2 - 96t$

[l] $4t^3 - 32t^2 + 12t$

4. Which of the following is *not* a correct **factorization** of the binomial $10x^2 + 40x$?

[a] $10x(x + 4)$

[b] $10(x^2 + 4x)$

[c] $5x(2x + 4)$

[d] $5x(2x + 8)$

5. Rewrite each of the following expressions as the product of two binomials by factoring out a common binomial factor. Watch out for the subtraction problems (b) and (d).

[a] $(x + 5)(x + 1) + (x + 5)(x + 8)$

[b] $(2x - 1)(3x + 5) - (2x - 1)(x + 4)$

[c] $(x - 7)(x - 9) + (x - 7)(4x + 5)$

[d] $(x + 1)(5x - 7) - (x + 1)(x - 3)$

APPLICATIONS

6. The area of a rectangle is represented by the polynomial $16x^2 + 56x$. The width of the rectangle is given by the binomial $2x + 7$.

[a] Give a monomial expression in terms of x for the length of the rectangle. Show how you arrived at your answer.

[b] If the length of the rectangle is 80, what is the width of the rectangle? Explain your thinking.

REASONING

7. Which of the following is *not* a factor of $4x^2 + 12x$?

[a] $x + 3$

[b] x

[c] $3x$

[d] 4