[factoring]

1. Find the greatest common factor for each group of terms:
   a. $-14x, 21x^2, 28x^3$
   b. $16x^2, 12x^3, 32x^5$
2. Factor the following
   a. $2x^2 - 10x + 2$
   b. $8x^3 - 4x^2 + 2x$
3. Find the missing terms represented by each □ to make the statement true
   a. $24x - 15 = \square(8x - 5)$
   b. $-12x + \square = -4(3x - 17)$
4. Factor
   a. $x^2 + 8x + 7$
   c. $x^2 - 16x + 644$
   b. $x^2 - 9x + 14$
5. Factor the difference of squares
   a. $x^2 - 49$
   b. $x^2 - 169$
6. Factor
   a. $2x^3 + 3x^4 - 4x^5 + 5x^6$
   c. $-28x^2y^2 + 14x^3y^3 - 7x^2y^3$
   b. $-3x(2x - 1) + 6(2x - 1)$
   d. $-4x - 4y + xy + y^2$
7. Factor each trinomial completely
   a. $x^2 + 2x - 35$
   c. $30 - 11x + x^2$
   b. $x^2 - 7x - 30$
   d. $7x^2 - 35x + 42$
8. Find an integer to replace the square □ so that the trinomial $x^2 + \square x - 18$ can be factored.
9. The length of a rectangle is $x + 7$ and the area is $x^2 - 4x - 77$, find the width of the rectangle.
10. Factor these difference of squares:
    a. $144x^2 - 49$
    b. $\frac{1}{9} - \frac{1}{16}x^2$
11. Simplify $x(y^2 - 3) - 3(y^2 - x) + 6x$
12. Arrange in descending powers of x, then evaluate it for $x = -2$

$$(x^2 + x - 6) - 5x - [(6x - 2x^2 + 3) - (4 - x^2)]$$

13. Find the expression for the volume of a box that has dimensions $(5x - 1)$ by $(2x + 4)$ by $3x$. Expand and simplify.
14. Find the binomial to complete this equality

$$(x - 4)(\quad) = x^2 + x - 20$$

15. Expand and simplify $(x + 5)(x - 5)(x^2 + 25)$

worksheets