

# HOMWORK: FACTORING

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Factor each expression completely. Complete as many problems as you can in the time given. Each question is marked either correct or incorrect.

Factor out the GCF.

1. $\frac{15x^2 + 10}{5}$ $5(3x^2 + 2)$	2. $\frac{4a + 18}{2}$ $2(2a + 9)$
3. $\frac{x^2 - 100x}{x}$ $x(x - 100)$	4. $\frac{2x^2 - 24x}{2x}$ $2x(x - 12)$

Factor using DOTS. If prime, write "Prime."

5. $x^2 - 49$ $(x - 7)(x + 7)$	6. $16x^2 + 25$ PRIME!
7. $81x^2 - 16$ $(9x^2 - 4)(9x^2 + 4)$	8. $4x^2 - 1$ $(2x - 1)(2x + 1)$
9. $x^2 + 100$ PRIME!	10. $9x^2 - 25y^2$ $(3x - 5y)(3x + 5y)$

Factor the trinomial when  $A = 1$ .

11.  $x^2 + 4x + 3$

$$\boxed{(x+1)(x+3)}$$

$$\frac{3}{+1+3}$$

12.  $x^2 + x - 42$

$$\boxed{(x-6)(x+7)}$$

$$\begin{array}{r} 42 \\ 1 \ 42 \\ 2 \ 21 \\ 4 \ 14 \\ -6+7 \end{array}$$

13.  $\frac{2x^2 - 2x - 24}{2}$

$$2$$

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

$$\boxed{2(x+3)(x-4)}$$

$$\begin{array}{r} 12 \\ 1 \ 12 \\ 2 \ 6 \\ +3-4 \end{array}$$

Factor the trinomial when  $A \neq 1$ .

14.  $\frac{2x^2 - 10x + 3x - 15}{2x + 3}$

$$2x(x-5) + 3(x-5)$$

$$\boxed{(x-5)(2x+3)}$$

15.  $\frac{9x^2 + 6x - 3x - 2}{3x - 1}$

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

$$\boxed{(3x+2)(3x-1)}$$