

Name \_\_\_\_\_

## FACTORING POLYNOMIALS – Day 1

**Factoring** is the \_\_\_\_\_ of multiplication.

<p>Find the product:</p> <p><math>(x + 2)(x + 5) =</math> _____</p>	<p>Find the factors:</p> <p><math>x^2 + 7x + 10 =</math> _____</p>
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### Steps for factoring a trinomial:

- 1) Factor out the greatest common factor, GCF.
- 2) Identify the sum (S) and product (P) from the terms that remain.
- 3) Find the factors of the product that add up to the sum.
- 4) Organize terms in a 2x2 box.
- 5) Factor out the GCF from the first row, and then fill in missing factors.

**Note: Don't forget to include the GCF from the first step in your final answer!**

### Factor the following trinomials completely.

<p>1. <math>6x^2 + 17x + 5 =</math> _____</p> <p style="text-align: right;">S = P =</p> <div style="text-align: center;"><table border="1" style="width: 100px; height: 100px; margin: 0 auto;"><tr><td style="width: 50px; height: 50px;"></td><td style="width: 50px; height: 50px;"></td></tr><tr><td style="width: 50px; height: 50px;"></td><td style="width: 50px; height: 50px;"></td></tr></table></div>					<p>2. <math>2x^2 - 16x + 32 =</math> _____</p> <p style="text-align: right;">S = P =</p> <div style="text-align: center;"><table border="1" style="width: 100px; height: 100px; margin: 0 auto;"><tr><td style="width: 50px; height: 50px;"></td><td style="width: 50px; height: 50px;"></td></tr><tr><td style="width: 50px; height: 50px;"></td><td style="width: 50px; height: 50px;"></td></tr></table></div>				
<p>3. <math>9x^2 + 3x - 12 =</math> _____</p> <p style="text-align: right;">S = P =</p> <div style="text-align: center;"><table border="1" style="width: 100px; height: 100px; margin: 0 auto;"><tr><td style="width: 50px; height: 50px;"></td><td style="width: 50px; height: 50px;"></td></tr><tr><td style="width: 50px; height: 50px;"></td><td style="width: 50px; height: 50px;"></td></tr></table></div>					<p>4. <math>x^2 + 2x + 1 =</math> _____</p> <p style="text-align: right;">S = P =</p> <div style="text-align: center;"><table border="1" style="width: 100px; height: 100px; margin: 0 auto;"><tr><td style="width: 50px; height: 50px;"></td><td style="width: 50px; height: 50px;"></td></tr><tr><td style="width: 50px; height: 50px;"></td><td style="width: 50px; height: 50px;"></td></tr></table></div>				

5.  $6x^3 - 14x^2 - 12x =$  \_\_\_\_\_

S =

P =


6.  $2x^2 - 2x - 24 =$  \_\_\_\_\_

S =

P =


7. Which expression is equivalent to  $2x^2 + 7x - 4$ ?

A.  $(2x + 1)(x - 4)$

B.  $(2x + 1)(x + 4)$

C.  $(2x - 1)(x + 4)$

D.  $(2x - 1)(x - 4)$