

NAME: _____ PERIOD: _____ DATE: _____

Homework Problem Set

For each equation below, write the factored form of the equation.

1. $y = x^2 + 9x + 20$

$$y = (x+5)(x+4)$$

2. $y = x^2 + 8x + 12$

$$y = (x+6)(x+2)$$

3. $y = x^2 + 13x + 42$

$$y = (x+6)(x+7)$$

4. $y = x^2 + 10x + 16$

$$y = (x+8)(x+2)$$

5. $y = x^2 + 11x + 10$

$$y = (x+10)(x+1)$$

6. $y = x^2 + 6x + 8$

$$y = (x+4)(x+2)$$

7. $y = x^2 - 8x + 7$

$$y = (x-7)(x-1)$$

8. $y = x^2 - 9x + 14$

$$y = (x-7)(x-2)$$

9. $y = x^2 - 8x + 15$

$$y = (x-5)(x-3)$$

10. $y = x^2 - 4x - 60$

$$y = (x-10)(x+6)$$

11. $y = x^2 + x - 20$

$$y = (x+5)(x-4)$$

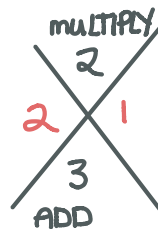
12. $y = x^2 - 2x - 15$

$$y = (x-5)(x+3)$$

13. The expression $x^2 + 3x + c$ can be factored and c is an integer.

A. What is a value c can have? Show how it would be factored.

$c = 2$ $y = (x+2)(x+1)$



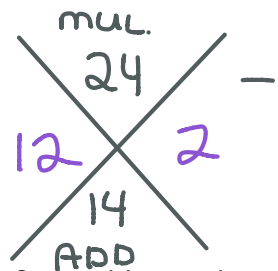
B. Are there any other values of c that would make the expression factorable? Explain your reasoning.

yes

14. The expression $x^2 + bx + 24$ can be factored and b is an integer.

A. What is a value b can have? Show how it would be factored.

$b = 14$ $y = (x+12)(x+2)$

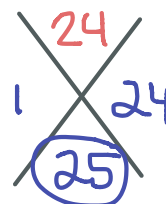
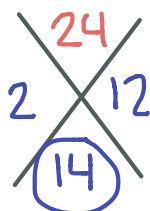


B. Are there any other values of b that would make the expression factorable? Explain your reasoning.

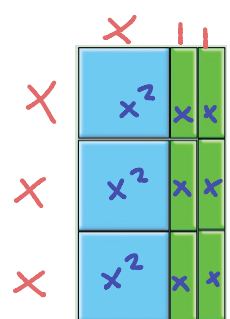
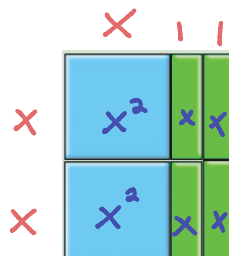
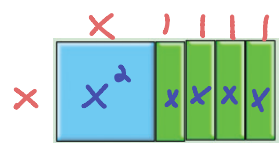
yes,

Factors of 24

- 1, 24 → $b = 25$
- 2, 12 → $b = 14$
- 3, 8 → $b = 11$
- 4, 6 → $b = 10$



For each algebra tile model below, write the expression it represents as a product and as a sum.

<p>15.</p>  <p>Product: $3x(x+2) = 3x^2 + 6x$</p> <p>Sum: $3x^2 + 6x$</p>	<p>16.</p>  <p>Product: $2x(x+1) = 2x^2 + 2x$</p> <p>Sum: $2x^2 + 4x$</p>	<p>17.</p>  <p>Product: $x(x+4) = x^2 + 4x$</p> <p>Sum: $x^2 + 4x$</p>
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18. Factor each of the following expressions. You may draw a model.

A. $4x^2 - 8x$

B. $9x^2 + 27x$

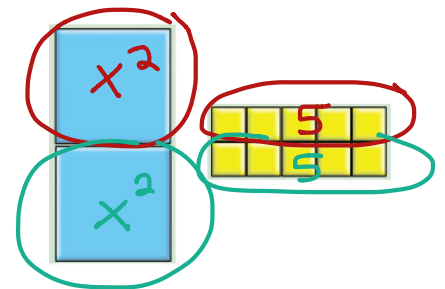
C. $10x^2 - 25x$

$4x(x-2)$

$9x(x+3)$

$5x(2x-5)$

19. Discuss how you could factor the expression $2x^2 + 10$. The algebra tile model is shown on the right.



$2(x^2 + 5)$

you can split into 2 groups, each w/ an x^2 and five 1 tiles.

