

Name

KEY

Class

Date

8-5**Practice**

Form K

Factoring $x^2 + bx + c$

Factor each completely.

1. $x^2 + 9x + 18$

$(x+6)(x+3)$

$$\begin{array}{r} \text{sum} \\ 9 \\ +6 \quad +3 \\ \hline 18 \\ \text{prod} \end{array}$$

2. $m^2 + 9m + 14$

$(m+7)(m+2)$

$$\begin{array}{r} \text{sum} \\ 9 \\ +7 \quad +2 \\ \hline 14 \\ \text{prod} \end{array}$$

3. $x^2 + 5x - 24$

$(x+8)(x-3)$

$$\begin{array}{r} \text{sum} \\ 5 \\ +8 \quad -3 \\ \hline -24 \\ \text{prod} \end{array}$$

4. $b^2 - 6b - 7$

$(b-7)(b+1)$

$$\begin{array}{r} \text{sum} \\ -6 \\ -7 \quad +1 \\ \hline -7 \\ \text{prod} \end{array}$$

5. $a^2 - 13a + 22$

$(a-11)(a-2)$

$$\begin{array}{r} \text{sum} \\ -13 \\ -11 \quad -2 \\ \hline 22 \\ \text{prod} \end{array}$$

6. $w^2 - 7w + 12$

$(w-3)(w-4)$

$$\begin{array}{r} \text{sum} \\ -7 \\ -3 \quad -4 \\ \hline 12 \\ \text{prod} \end{array}$$

7. $d^2 + 11d + 30$

$(d+6)(d+5)$

$$\begin{array}{r} \text{sum} \\ 11 \\ +6 \quad +5 \\ \hline 30 \\ \text{prod} \end{array}$$

8. $y^2 - 8y + 15$

$(y-5)(y-3)$

$$\begin{array}{r} \text{sum} \\ -8 \\ -5 \quad -3 \\ \hline 15 \\ \text{prod} \end{array}$$

9. $x^2 - 16x + 60$

$(x-10)(x-6)$

$$\begin{array}{r} \text{sum} \\ -16 \\ -10 \quad -6 \\ \hline 60 \\ \text{prod} \end{array}$$

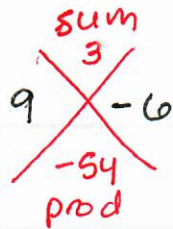
10. $n^2 - 6n - 40$

$(n-10)(n+4)$

$$\begin{array}{r} \text{sum} \\ -6 \\ -10 \quad +4 \\ \hline -40 \\ \text{prod} \end{array}$$

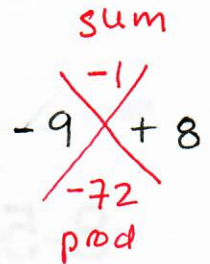
11. $y^2 + 3y - 54$

$= (y + 9)(y - 6)$



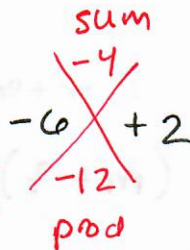
12. $z^2 - z - 72$

$= (z - 9)(z + 8)$



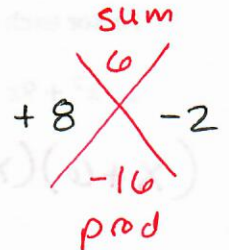
13. $v^2 - 4vw - 12w^2$

$= (v - 6w)(v + 2w)$

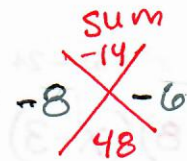


14. $n^2 + 6nm - 16m^2$

$= (n + 8m)(n - 2m)$



15. The area of a rectangular window is given by the trinomial $(x^2 - 14x + 48) \text{ ft}^2$.
If the window's length is $(x - 8)$ feet, what is the window's width?

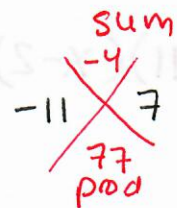


(?) $A = (x - 8) \text{ ft} \cdot (x - 6) \text{ ft}$

$(x - 8)(x - 6) = (x^2 - 14x + 48)$

The width is $(x - 6) \text{ ft}$

16. The area of a rectangular area rug is given by the trinomial $(p^2 - 4p - 77) \text{ m}^2$.
If the length of the rug $(p + 7) \text{ m}$, what is the width of the rug?

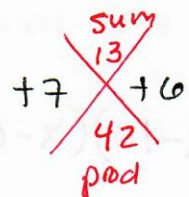


$p^2 - 4p - 77 = (p + 7)(p - 11)$

The width of the rug is $(p - 11) \text{ m}$.

17. Write possible expressions for the length and the width of a rectangle with area $x^2 + 13x + 42$.

$x^2 + 13x + 42 = (x + 7)(x + 6)$



The dimensions of the rectangle are $(x + 7)$ units and $(x + 6)$ units.