

Name: KEY
Date: _____

F.1 Worksheet

Simplify

1) $(x+4)(x+7)$

$$\begin{aligned} & \cdot \underbrace{x^2 + 7x} + \underbrace{4x + 28} \\ & x^2 + 11x + 28 \end{aligned}$$

2) $(y-6)(y+2)$

$$\begin{aligned} & y^2 + \underbrace{2y - 6y} - 12 \\ & y^2 - 4y - 12 \end{aligned}$$

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

$$\begin{aligned} & w^2 - \underbrace{4w - 3w} + 12 \\ & w^2 - 7w + 12 \end{aligned}$$

4) $(7-m)(7+m)$

$$\begin{aligned} & 49 + \underbrace{7m - 7m} - m^2 \\ & 49 - m^2 \end{aligned}$$

5) $(2x+3)(4x-1)$

$$\begin{aligned} & 8x^2 - \underbrace{2x + 12x} - 3 \\ & 8x^2 + 10x - 3 \end{aligned}$$

6) $(3x-5)^2$

$$\begin{aligned} & (3x-5)(3x-5) \\ & 9x^2 - \underbrace{15x - 15x} + 25 \\ & 9x^2 - 30x + 25 \end{aligned}$$

7) $-2(p-8)(p+1)$

$$\begin{aligned} & -2 \left[\underbrace{p^2 + p - 8p - 8} \right] \\ & -2 \left[\underbrace{p^2 - 7p - 8} \right] \\ & -2p^2 + 14p + 16 \end{aligned}$$

8) $-(x+1)(x+4)$

$$\begin{aligned} & - \left[\underbrace{x^2 + 4x + x + 4} \right] \\ & - \left[\underbrace{x^2 + 5x + 4} \right] \\ & -x^2 - 5x - 4 \end{aligned}$$

9) $4(w-2)(-w+9)$

$$\begin{aligned} & 4 \left[\underbrace{-w^2 + 9w + 2w - 18} \right] \\ & 4 \left[\underbrace{-w^2 + 11w - 18} \right] \\ & -4w^2 + 44w - 72 \end{aligned}$$

10) $(3x-1)(x+2) + (x+5)(2x-2)$

$$\begin{aligned} & 3x^2 + \underbrace{6x - x} - 2 + \left[\underbrace{2x^2 - 2x + 10x - 10} \right] \\ & \underbrace{3x^2 + 5x - 2} + \underbrace{2x^2 + 8x - 10} \\ & 5x^2 + 13x - 12 \end{aligned}$$

11) $(a-4)(a-3) - (a+2)(a-5)$

$$\begin{aligned} & a^2 - \underbrace{3a - 4a} + 12 - \left[\underbrace{a^2 - 5a + 2a - 10} \right] \\ & a^2 - 7a + 12 - \left[\underbrace{a^2 - 3a - 10} \right] \\ & \underbrace{a^2 - 7a + 12} - \underbrace{a^2 + 3a + 10} \\ & -4a + 22 \end{aligned}$$

12) $(t+2)(t^2-3t+2)$

$$\begin{aligned} & t^3 - \underbrace{3t^2 + 2t} + \underbrace{2t^2 - 6t} + 4 \\ & t^3 - t^2 - 4t + 4 \end{aligned}$$

13) $(y^2+y-6)(y+6)$

$$\begin{aligned} & y^3 + \underbrace{6y^2 + y^2} + \underbrace{6y - 6y} - 36 \\ & y^3 + 7y^2 - 36 \end{aligned}$$

14) $2(x+3)^2$

$$\begin{aligned} & 2(x+3)(x+3) \\ & 2 \left[\underbrace{x^2 + 3x + 3x + 9} \right] \\ & 2 \left[\underbrace{x^2 + 6x + 9} \right] \\ & 2x^2 + 12x + 18 \end{aligned}$$