

Worksheet 2.4 B

(11) $y = a(x-p)(x-q)$
 $-4 = a(-3+5)(-3+1)$
 $-4 = -4a$
 $1 = a$
 $y = (x+5)(x+1)$

(12) $y = a(x-p)(x-q)$
 $-6 = a(3+0)(3-4)$
 $-6 = -3a$
 $2 = a$
 $y = 2(x)(x-4)$

(13) $y = a(x-p)(x-q)$
 $5 = a(-1+2)(-1+5)$
 $5 = 4a$
 $\frac{5}{4} = a$
 $y = \frac{5}{4}(x+2)(x+5)$

(14) $y = a(x-p)(x-q)$
 $4 = a(-3+2)(-3+6)$
 $4 = -3a$
 $-\frac{4}{3} = a$
 $y = -\frac{4}{3}(x+2)(x+6)$

(15) $y = a(x-p)(x-q)$
 $-5 = a(-2+3)(-2-2)$
 $-5 = -4a$
 $\frac{5}{4} = a$
 $y = \frac{5}{4}(x+3)(x-2)$

(16) $y = a(x-p)(x-q)$
 $5 = a(1-2)(1+3)$
 $5 = -4a$
 $-\frac{5}{4} = a$
 $y = -\frac{5}{4}(x-2)(x+3)$

(17) $y = ax^2 + bx + c$
 $13 = 9a + 3b + c$
 $9 = a - b + c$
 $3 = 4a + 2b + c$

$y = 3x^2 - 5x + 1$

(18) $y = ax^2 + bx + c$
 $3 = a + b + c$
 $9 = 16a + 4b + c$
 $1 = 4a + b + c$

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

(12) $13 = 9a + 3b + c$
 $-9 = -a + b - c$

(2+3) $9 = a - b + c$
 $-3 = -4a - 2b - c$

(12) $3 = a + b + c$
 $-9 = -16a - 4b - c$

(2+3) $9 = 16a + 4b + c$
 $-1 = -4a - 2b - c$

$4 = 8a + 4b \cdot 3$
 $6 = -3a - 3b \cdot 8$

$4 = 8a - 20$

$-6 = -15a - 3b \cdot 2$
 $8 = 12a + 2b \cdot 3$

$-6 = -30 - 3b$

$12 = 24a + 12b$
 $48 = -24a - 24b$

$24 = 8a$
 $3 = a$

$-12 = -30a - 6b$
 $24 = 36a + 6b$

$-8 = b$

$60 = -12b$
 $-5 = b$

$13 = 3a - 15 + c$

$12 = 6a$
 $2 = a$

$3 = 2 - 8 + c$
 $9 = c$

$$\begin{aligned} \textcircled{1} \quad y &= a(x-h)^2 + k \\ 5 &= a(2-1)^2 + 2 \\ 3 &= a \\ y &= 3(x-1)^2 + 2 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad y &= a(x-h)^2 + k \\ 5 &= a(-2+1)^2 + 3 \\ 2 &= a \\ y &= 2(x+1)^2 + 3 \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad y &= a(x-h)^2 + k \\ -3 &= a(2-0)^2 - 4 \\ 1 &= 4a \\ \frac{1}{4} &= a \\ y &= \frac{1}{4}(x)^2 - 4 \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad y &= a(x-h)^2 + k \\ -1 &= a(-1+2)^2 - 5 \\ 4 &= a \\ y &= 4(x+2)^2 - 5 \end{aligned}$$

$$\begin{aligned} \textcircled{5} \quad y &= a(x-h)^2 + k \\ -2 &= a(3+2)^2 + 0 \\ -2 &= a \\ y &= -2(x-2)^2 \end{aligned}$$

$$\begin{aligned} \textcircled{6} \quad y &= a(x-h)^2 + k \\ 2 &= a(2-3)^2 + 5 \\ -3 &= a \\ y &= -3(x-3)^2 + 5 \end{aligned}$$

$$\begin{aligned} \textcircled{7} \quad y &= a(x-h)^2 + k \\ -2 &= a(-5+2)^2 - 1 \\ -1 &= 9a \\ -\frac{1}{9} &= a \\ y &= -\frac{1}{9}(x+2)^2 - 1 \end{aligned}$$

$$\begin{aligned} \textcircled{8} \quad y &= a(x-h)^2 + k \\ -3 &= a(-5+3)^2 + 1 \\ -4 &= 4a \\ -1 &= a \\ y &= -(x+3)^2 + 1 \end{aligned}$$

$$\begin{aligned} \textcircled{9} \quad y &= a(x-p)(x-q) \\ 1 &= a(1+1)(1-3) \\ 1 &= -4a \\ -\frac{1}{4} &= a \\ y &= -\frac{1}{4}(x+1)(x-3) \end{aligned}$$

$$\begin{aligned} \textcircled{10} \quad y &= a(x-p)(x-q) \\ -2 &= a(4-2)(4-8) \\ -2 &= -8a \\ \frac{1}{4} &= a \\ y &= \frac{1}{4}(x-2)(x-8) \end{aligned}$$