

(29)  $(1, 2)$   $(3, 4)$   $(6, -8)$

$$\begin{aligned} a + b + c &= 2 \\ 9a + 3b + c &= 4 \\ 36a + 6b + c &= -8 \end{aligned}$$

$$|A| = \begin{vmatrix} 1 & 1 & 1 \\ 9 & 3 & 1 \\ 36 & 6 & 1 \end{vmatrix} = -30$$

$$|a| = \begin{vmatrix} 2 & 1 & 1 \\ 4 & 3 & 1 \\ -8 & 6 & 1 \end{vmatrix} = 30$$

$$a = \frac{30}{-30} = -1$$

$$|b| = \begin{vmatrix} 1 & 2 & 1 \\ 9 & 4 & 1 \\ 36 & -8 & 1 \end{vmatrix} = -150$$

$$b = \frac{-150}{-30} = 5$$

$$c = \frac{60}{-30} = -2$$

$$|c| = \begin{vmatrix} 1 & 1 & 2 \\ 9 & 3 & 4 \\ 36 & 6 & -8 \end{vmatrix} = 60$$

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

$$(30) \quad (-2, -1) \quad (1, 11) \quad (2, 27)$$

$$4a - 2b + c = -1$$

$$a + b + c = 11$$

$$4a + 2b + c = 27$$

$$|A| = \begin{vmatrix} 4 & -2 & 1 \\ 1 & 1 & 1 \\ 4 & 2 & 1 \end{vmatrix} = -12$$

$$|a| = \begin{vmatrix} -1 & -2 & 1 \\ 11 & 1 & 1 \\ 27 & 2 & 1 \end{vmatrix} = -36$$

$$a = \frac{-36}{-12} = 3$$

$$|b| = \begin{vmatrix} 4 & -1 & 1 \\ 1 & 11 & 1 \\ 4 & 27 & 1 \end{vmatrix} = -84$$

$$b = \frac{-84}{-12} = 7$$

$$|c| = \begin{vmatrix} 4 & -2 & -1 \\ 1 & 1 & 11 \\ 4 & 2 & 27 \end{vmatrix} = -12$$

$$c = \frac{-12}{-12} = 1$$

$$y = 3x^2 + 7x + 1$$

$$(31) \quad (-4, -7) \quad (-3, 3) \quad (3, -21)$$

$$16a - 4b + c = -7$$

$$9a - 3b + c = 3$$

$$9a + 3b + c = -21$$

$$|A| = \begin{vmatrix} 16 & -4 & 1 \\ 9 & -3 & 1 \\ 9 & 3 & 1 \end{vmatrix} = -42$$

$$|a| = \begin{vmatrix} -7 & -4 & 1 \\ 3 & -3 & 1 \\ -21 & 3 & 1 \end{vmatrix} = 84$$

$$a = \frac{84}{-42} = -2$$

$$b = \frac{168}{-42} = -4$$

$$|b| = \begin{vmatrix} 16 & -7 & 1 \\ 9 & 3 & 1 \\ 9 & -21 & 1 \end{vmatrix} = 168$$

$$c = \frac{-378}{-42} = 9$$

$$|c| = \begin{vmatrix} 16 & -4 & -7 \\ 9 & -3 & 3 \\ 9 & 3 & -21 \end{vmatrix} = -378$$

$$y = -2x^2 - 4x + 9$$