**8-6.** $(2x - 3)(x + 2y - 4) = 2x^2 + 4xy - 11x - 6y + 12$

**8-7. See below:**

a. $12x^2 + 17x - 5$

b. $4x^2 - 28x + 49$

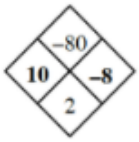
**8-8. See below:**

a. $t(n) = 500 + 1500(n - 1)$

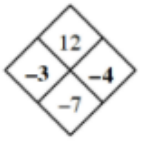
b. $t(n) = 30 \cdot 5^{n-1}$

**8-9. See answers in bold in the diamonds below:**

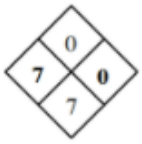
a.



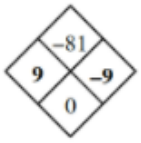

b.




c.

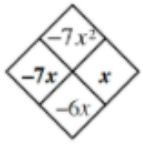



d.




e.


f.




**8-10. See below:**

a. $4(x + 2)$

b. $5(2x + 5y + 1)$

c. $2x(x - 4)$

d. $3x(3xy + 4 + y)$

**8-11. See below:**

a. $(0, -8)$; It is the constant in the equation

b. $(-2, 0)$ and $(4, 0)$; Students may notice that the product of the $x$-intercepts equals the constant term

c. $(1, -9)$; Its $x$-coordinate is midway between the $x$-intercepts.

**8-12. See below:**

a. $-1$

b. $\approx 7.24$

c. $\approx -4.24$