

$$\begin{aligned}
 \text{د) } \lambda ax^2 + 2\lambda axy + \lambda ay^2 &= 2a(x^2 + 2xy + y^2) = 2a(2x + 3y)^2 \\
 \swarrow \quad \quad \quad \swarrow \quad \quad \quad \swarrow & \quad \quad \quad \downarrow \quad \quad \quad \downarrow \\
 2x^2 \quad \quad \quad 2xy \quad \quad \quad 2y^2 & \quad \quad \quad \text{ع: } 2x \quad \quad \quad \text{ع: } 3y \\
 & \quad \quad \quad 2x \cdot 2x \cdot 3y
 \end{aligned}$$


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مثال: حاصل عبارات زیر را به یک اتحاد با بردست آورید.

$$\textcircled{1} \quad \left(\frac{2}{a}\right)^2 + 2\left(\frac{2}{a}\right)\left(\frac{1}{b}\right) + \left(\frac{1}{b}\right)^2 = \left(\frac{2}{a} + \frac{1}{b}\right)^2 = \left(\frac{2}{a}\right)^2 = 16$$

$$a^2 + 2ab + b^2 = (a+b)^2$$

$$\textcircled{2} \quad (2,1)^2 - 2(2,1)(1,1) + (1,1)^2 = (2,1 - 1,1)^2 = 3^2 = 9$$

۱- عبارت‌های جبری زیر را ساده کنید.

الف)  $(-5m)^2(-2m)^3 - (\frac{1}{2}m)^2(-2m)^3 = (25m^2)(-8m^3) - (\frac{1}{4}m^2)(-8m^3) = -200m^5 + 2m^5 = -198m^5$

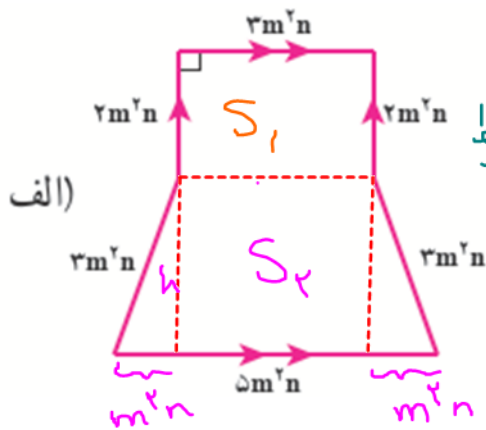
ج)  $(x^m-1)(x^m-1)$

$(x^m-1)^2 = x^{2m} - 2x^m + 1$

ب)  $7a^3 - 4b^3 + 5c^3 - (a^3 - 9b^3 - 11c^3) = 6a^3 + 13b^3 + 16c^3$

د)  $x - [(y-x) - (y-1)] = x - (y - x - y + 1) = x - (-x + 1) = x + x - 1 = 2x - 1$

۲- محیط و مساحت هر شکل را بیابید.



محیط =  $3m^2n + 2m^2n + 3m^2n + 5m^2n + 2m^2n + 2m^2n = 18m^2n$

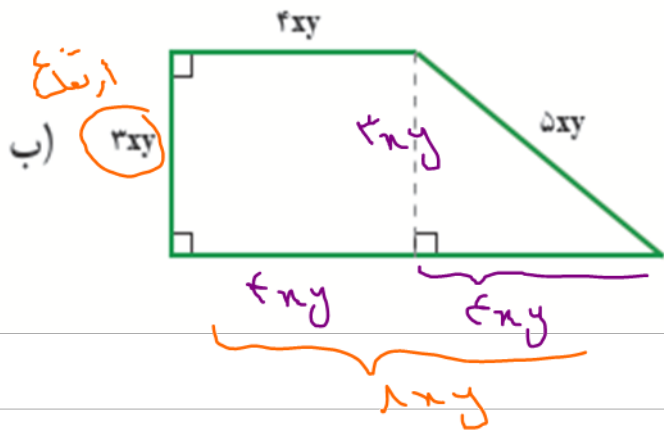
مساحت  $S_1 = 3m^2n \times 2m^2n = 6m^4n^2$

مساحت  $(3m^2n)^2 = (m^2n)^2 + h^2 \Rightarrow h^2 = (3m^2n)^2 - (m^2n)^2$

$h^2 = 9m^4n^2 - m^4n^2 = 8m^4n^2 \Rightarrow h = 2\sqrt{2}m^2n$

$$S_r = \frac{(\overset{\lambda m^2 n}{\partial m^2 n + r m^2 n})(r \sqrt{r} m^2 n)}{r} = \frac{17 \sqrt{r} m^2 n^2}{r} = 17 \sqrt{r} m^2 n$$

$$\begin{aligned} \text{جواب } S &= S_1 + S_r = 7 m^2 n^2 + 17 \sqrt{r} m^2 n = \\ &= (7 + 17 \sqrt{r}) m^2 n^2 \end{aligned}$$



$$\begin{aligned} \underline{S} &= r_{xy} + \Delta xy + r_{xy} + r_{xy} + r_{xy} \\ &= r_{xy} \end{aligned}$$

$$S = \frac{(r_{xy} + \lambda r_{xy})(r_{xy})}{r} = \frac{r_{xy} (r_{xy})}{r} = 17 r_{xy}^2$$