

"Addition"

$$\begin{aligned}
 5. \quad x^2 - y^2 &= 12 \\
 x^2 + y^2 &= 20 \\
 \hline
 2x^2 &= 32 \\
 \frac{2x^2}{2} &= \frac{32}{2} \\
 x^2 &= 16 \\
 x &= \pm\sqrt{16} \\
 x &= \pm 4
 \end{aligned}$$

$$\begin{aligned}
 \rightarrow x = -4 \\
 x^2 - y^2 &= 12 \\
 (-4)^2 - y^2 &= 12 \\
 16 - y^2 &= 12 \\
 16 - 12 &= y^2 \\
 4 &= y^2 \\
 \pm\sqrt{4} &= y \\
 \pm 2 &= y \\
 \boxed{(-4, -2)} \\
 \boxed{(-4, 2)}
 \end{aligned}$$

$$\begin{aligned}
 x = 4 \\
 x^2 - y^2 &= 12 \\
 (4)^2 - y^2 &= 12 \\
 16 - y^2 &= 12 \\
 16 - 12 &= y^2 \\
 4 &= y^2 \\
 \pm\sqrt{4} &= y \\
 \pm 2 &= y \\
 \boxed{(4, -2)} \\
 \boxed{(4, 2)}
 \end{aligned}$$

$$\begin{aligned}
 6. \quad 3x^2 - 5y^2 &= -17 \quad \text{AKS} \\
 2x^2 + 3y^2 &= 14 \quad \text{PKS} \\
 9x^2 - 15y^2 &= -51 \\
 \underline{10x^2 + 15y^2} &= \underline{70} \\
 19x^2 &= 19 \\
 \frac{19x^2}{19} &= \frac{19}{19} \\
 x^2 &= 1 \\
 x &= \pm\sqrt{1} \\
 x &= \pm 1
 \end{aligned}$$

$$\begin{aligned}
 \rightarrow x = -1 \\
 2x^2 + 3y^2 &= 14 \\
 2(-1)^2 + 3y^2 &= 14 \\
 2 + 3y^2 &= 14 \\
 3y^2 &= 14 - 2 \\
 3y^2 &= 12 \\
 \frac{3y^2}{3} &= \frac{12}{3} \\
 y^2 &= 4 \\
 \pm\sqrt{4} &= y \\
 \pm 2 &= y \\
 \boxed{(-1, -2)} \\
 \boxed{(-1, 2)}
 \end{aligned}$$

$$\begin{aligned}
 x = 1 \\
 2x^2 + 3y^2 &= 14 \\
 2(1)^2 + 3y^2 &= 14 \\
 2 + 3y^2 &= 14 \\
 3y^2 &= 14 - 2 \\
 3y^2 &= 12 \\
 \frac{3y^2}{3} &= \frac{12}{3} \\
 y^2 &= 4 \\
 \pm\sqrt{4} &= y \\
 \pm 2 &= y \\
 \boxed{(1, -2)} \\
 \boxed{(1, 2)}
 \end{aligned}$$