

$$\begin{aligned} 9. & 5\sqrt{21} - \frac{7\sqrt{21}}{\sqrt{3}} + \frac{\sqrt{15}}{\sqrt{5}} - 12\sqrt{7} \\ &= 5\sqrt{9 \cdot 3} - 7\sqrt{\frac{21}{3}} + \sqrt{\frac{15}{5}} - 12\sqrt{7} \\ &= 15\sqrt{3} - 7\sqrt{7} + \sqrt{3} - 12\sqrt{7} \\ &= 16\sqrt{3} - 19\sqrt{7} \end{aligned}$$

$$\begin{aligned} 8. \quad & 3\sqrt{2} - \sqrt{3}(2 + 2\sqrt{3}) \\ & = 3\sqrt{2} - 2\sqrt{3} - \underline{2\sqrt{3 \cdot 3}} \\ & = 3\sqrt{2} - 2\sqrt{3} - 6 \end{aligned}$$

$-2\sqrt{9}$   
 $-2 \cdot 3$

$$\begin{aligned} & \frac{1}{\sqrt{5} + 2} \cdot \frac{\sqrt{5} - 2}{\sqrt{5} - 2} \\ &= \frac{\sqrt{5} - 2}{(\sqrt{5} + 2)(\sqrt{5} - 2)} \\ &= \frac{\sqrt{5} - 2}{1} = \boxed{\sqrt{5} - 2} \end{aligned}$$

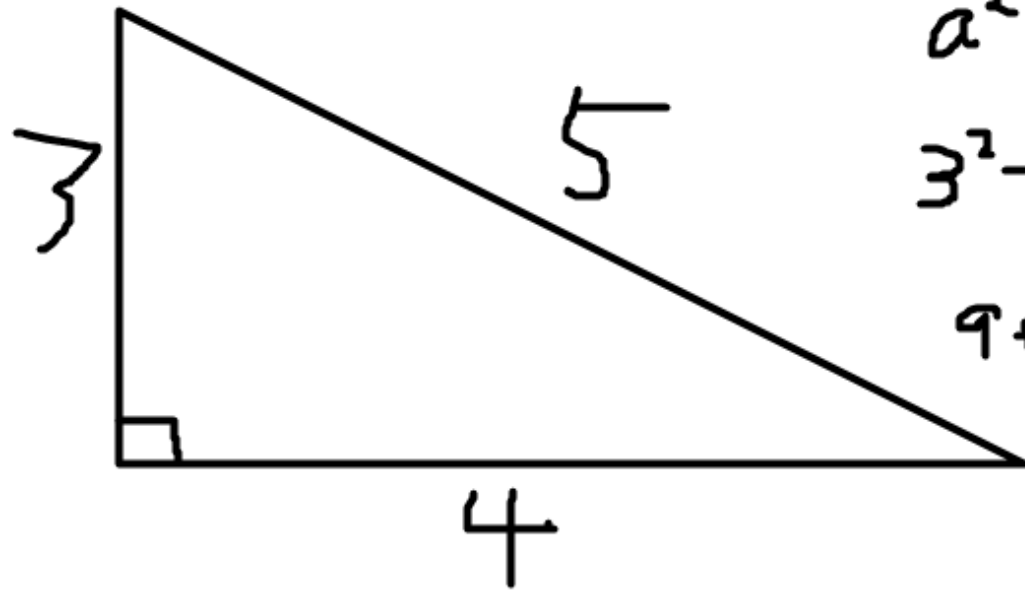
$$\begin{aligned} & (\sqrt{5} + 2)(\sqrt{5} - 2) \\ & \sqrt{5}(\sqrt{5} - 2) + 2(\sqrt{5} - 2) \\ & 5 - 2\sqrt{5} + 2\sqrt{5} - 4 \\ & 1 \end{aligned}$$

$$\begin{aligned} & \frac{2}{\sqrt{7}+2} \cdot \frac{\sqrt{7}-2}{\sqrt{7}-2} \\ &= \frac{2(\sqrt{7}-2)}{(\sqrt{7}+2)(\sqrt{7}-2)} \\ &= \frac{2\sqrt{7}-4}{3} \end{aligned}$$

$$\begin{aligned} & (\sqrt{7}+2)(\sqrt{7}-2) \\ &= \sqrt{7}(\sqrt{7}-2) + 2(\sqrt{7}-2) \\ &= 7 - 2\sqrt{7} + 2\sqrt{7} - 4 \\ &= 3 \end{aligned}$$

$$\frac{3}{\sqrt{10} - 2}$$

# Pythagoras Theorem



$$a^2 + b^2 = c^2$$

$$3^2 + 4^2 = 5^2$$

$$9 + 16 = 25$$

$$25 = 25$$

