

2.74) f

$$\frac{\sqrt{6}-\sqrt{3}}{\sqrt{6}+\sqrt{3}} \cdot \frac{\sqrt{3}+\sqrt{6}}{\sqrt{3}-\sqrt{6}} = \frac{c}{r_a-r_b} = \frac{c \cdot (\sqrt{a}+\sqrt{b})}{(\sqrt{a}-\sqrt{b})(\sqrt{a}+\sqrt{b})} = \frac{c \cdot (\sqrt{a}+\sqrt{b})}{a-b}$$

$$\frac{(\sqrt{6}-\sqrt{3})(\sqrt{6}-\sqrt{3})}{(\sqrt{6}+\sqrt{3})(\sqrt{6}-\sqrt{3})} = \frac{(\sqrt{3}+\sqrt{6})^2}{(\sqrt{3}-\sqrt{6})(\sqrt{3}+\sqrt{6})}$$

$$\frac{9-2\sqrt{18}}{3} = \frac{9-2\sqrt{18}}{-3} = \frac{9-2\sqrt{18}}{3} + \frac{9+2\sqrt{18}}{3} = \frac{18}{3} = 6$$

2.75)

$$\frac{\sqrt{7}+\sqrt{5}}{\sqrt{7}-\sqrt{5}} + \frac{\sqrt{7}-\sqrt{5}}{\sqrt{7}+\sqrt{5}} = \frac{(\sqrt{7}+\sqrt{5})^2}{(\sqrt{7}-\sqrt{5})(\sqrt{7}+\sqrt{5})} + \frac{(\sqrt{7}-\sqrt{5})^2}{(\sqrt{7}+\sqrt{5})(\sqrt{7}-\sqrt{5})} = \frac{7+2\sqrt{35}+5}{7-5} + \frac{7-2\sqrt{35}+5}{7+5} = \frac{12+2\sqrt{35}}{2} + \frac{12-2\sqrt{35}}{12} = 12 \in \mathbb{Z}$$

2.75 c, d)

$$a^2-b^2 = (a+b)(a-b) \quad 2x=36$$

$$a^2-b^2=36$$

$$a-b=2$$

$$36 = (a+b) \cdot 2 \Rightarrow a+b=18$$

$$\begin{array}{r} a+b=? \\ a=? \\ b=? \end{array} \quad \begin{array}{l} + \\ a+b=18 \\ a-b=2 \\ \hline 2a=20 \\ a=10 \end{array}$$

$$\begin{array}{l} 3-1 \\ 0+b-(-b)=16 \\ b+b \\ 2b=16 \\ b=8 \end{array}$$

2.75 d

$$\begin{array}{l} (a+b)^2=225 \\ (a-b)^2=121 \end{array} \quad \begin{array}{l} a+b=15 \quad \checkmark \quad a+b=-15 \\ a-b=11 \quad \checkmark \quad a-b=-11 \end{array}$$

$$\begin{array}{l} a > b \\ ab=? \\ a^2-b^2=? \end{array} \quad \begin{array}{l} a+b=-15 \\ a-b=11 \end{array}$$

2.72 - 2.75

