

$$\left(\frac{a^r + b^r - \sqrt{ab}}{A - B}\right)^r \left(\frac{a^r + b^r + \sqrt{ab}}{A + B}\right)^r = (a^r + b^r - \sqrt{ab})^r$$

(r)

$$\Rightarrow \sqrt{4} + 1 + \sqrt{4} - 1\sqrt{1} = \frac{1\sqrt{4} - 1\sqrt{1}}{\sqrt{1} \cdot \sqrt{1}} > 1^r + 1 - 1\sqrt{1} = 1 - 1\sqrt{1}$$

$$= 11 - 19\sqrt{1} = 1(1 - \sqrt{1}) \Rightarrow \underline{1} = 19 \checkmark$$

$$\left(\frac{a + \frac{1}{a} + \sqrt{1}}{A + B}\right)^r \left(\frac{a + \frac{1}{a} - \sqrt{1}}{A - B}\right)^r = \left(a^r + \frac{1}{a^r} + 1 - 1\right)^r$$

(r)

$$= a^r + \frac{1}{a^r} + 1 \Rightarrow \frac{1 - 1\sqrt{1}}{1 - 1\sqrt{1}} + \frac{1}{1 - 1\sqrt{1}} + 1 = \frac{1 - 1\sqrt{1} + 1 + 1 - 1\sqrt{1}}{1 - 1\sqrt{1}} + 1$$

$$= 1^r + 1 = 19 = 1 \Rightarrow \underline{1} = 1 \checkmark$$

$$\sqrt{1\sqrt{1}} \left(\frac{1}{1}\right)^{\frac{1}{1}} = 1^{\frac{1}{1}} \times 1^{\frac{1}{1}} = 1 = 1 \Rightarrow \frac{1}{1} = \frac{1}{1} = \underline{1/1} \checkmark$$

(r)

$$a^{\frac{1}{1}} = 1V \times a^{\frac{1}{1}} \Rightarrow 1 = 1V \times a^{\frac{1}{1}} \Rightarrow a^{\frac{1}{1}} = \frac{1}{1V}$$

(r)

$$\Rightarrow a = \frac{1}{1\sqrt{1}} \Rightarrow \left(\frac{1}{a} - 1\right) = 1\sqrt{1} - 1$$

$$\Rightarrow \frac{1\sqrt{1} - 1}{\sqrt{1} + 1} = \frac{1\sqrt{1} - 1}{\sqrt{1} + 1} \times \frac{\sqrt{1} - 1}{\sqrt{1} - 1} = \frac{1 - 1\sqrt{1} - 1\sqrt{1} + 1}{1} = \frac{1 - 1\sqrt{1}}{1}$$

$$\Rightarrow \underline{1 - 1\sqrt{1}} \checkmark$$

$$\sqrt{n+a} - \sqrt{n-1} = 1 = A \quad AB = 1B = \frac{n+a - n+1}{a+1}$$

(r)

$$\sqrt{n+a} + \sqrt{n-1} = B \Rightarrow B = 1 + \frac{a}{1}$$

$$\Rightarrow B - 1 = 1 + \frac{a}{1} - 1 = \underline{\frac{a}{1}} \checkmark$$

1.