

27 (10) $a \ b \ c \rightarrow \log a \rightarrow b = \sqrt{ac}$
 $a \ d \ c \rightarrow \log a \rightarrow d = \frac{a+c}{2}$

$$\sqrt{ac} \geq \frac{a+c}{2} \quad / (c)^2$$

$$ac \geq \frac{a^2 + 2ac + c^2}{4}$$

$$4ac \geq a^2 + 2ac + c^2$$

$$0 \geq a^2 - 2ac + c^2$$

$$0 \leq (a-c)^2 \quad \text{always positive}$$

(11) $3d = 5b$

$$3\left(\frac{a+c}{2}\right) = 5\sqrt{ac} \quad / (c)^2$$

$$\frac{9}{4}(a^2 + 2ac + c^2) = 25ac$$

$$9a^2 + 18ac + 9c^2 = 100ac$$

$$9a^2 - 82ac + 9c^2 = 0 \quad / : a^2$$

$$9\left(\frac{a}{c}\right)^2 - 82\left(\frac{a}{c}\right) + 9 = 0$$

$$9t^2 - 82t + 9 = 0$$

$$t = 9$$

$$t = \frac{1}{9}$$

$$\frac{c}{a} = 9^2$$

$$9^2 = 9 \rightarrow 9 = 3$$

$$9^2 = \frac{1}{9} \rightarrow 9 = \frac{1}{3}$$