

2-54
11.12

$$q = \frac{a-x}{a+x} = \left(\frac{a-x}{a+x}\right)^2$$

$$0 < \left(\frac{a-x}{a+x}\right)^2 < 1$$

$$-1 < \frac{a-x}{a+x} < 1$$

$$0 < \frac{2a}{a+x}$$

$$\boxed{0 < a+x}$$

$$\frac{-2x}{a+x} < 0$$

$$\boxed{x < -a, x > 0}$$

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 $a \neq x > 0$
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 $a \neq x > 0$

$0 < q < 1$ (11.12)

$$S = \frac{a_1}{1-q} = \frac{\frac{a+x}{a-x}}{1 - \left(\frac{a-x}{a+x}\right)^2} =$$
$$= \frac{\frac{a+x}{a-x}}{\frac{4ax}{(a+x)^2}} = \frac{(a+x)^3}{4ax(a-x)}$$