

No. :

Date. :

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$$1). \lim_{x \rightarrow 3} \frac{x^2 - 9}{x - 3} = \frac{(x-3)(x+3)}{x-3}$$

$$= \frac{\cancel{(3-3)}(\cancel{3+3})}{\cancel{3-3}}$$

$$= \frac{\cancel{(x-3)}(x+3)}{\cancel{x-3}}$$

$$= x + 3$$

$$= 3 + 3 = 6$$

$$2). \lim_{t \rightarrow -7} \frac{t^2 + 4t - 21}{t + 7} = \frac{t^2 - 21 + 4t}{t + 7}$$

$$= \frac{\cancel{(t+7)}(t-3) + 4t}{\cancel{t+7}}$$

$$= t - 3 + 4t$$

$$= -7(-3) + 4(-7)$$

$$= 21 + (-28)$$

$$= -7$$

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$$3). \lim_{x \rightarrow 0} \frac{\sqrt{4-2x} - \sqrt{4+2x}}{x} =$$

$$= \frac{\sqrt{4-2x} - \sqrt{4+2x}}{x} \times \frac{\sqrt{4-2x} + \sqrt{4+2x}}{\sqrt{4-2x} + \sqrt{4+2x}}$$

$$= \frac{4-2x - (4+2x)}{x(\sqrt{4-2x} + \sqrt{4+2x})}$$

$$= \frac{x-0}{x(\sqrt{4-2x} + \sqrt{4+2x})}$$

$$= \frac{-1}{\sqrt{4-2x} + \sqrt{4+2x}}$$

$$= \frac{-1}{\sqrt{4-2(0)} + \sqrt{4+2(0)}}$$

$$= \frac{-1}{\sqrt{4} + \sqrt{4}}$$

$$= \frac{-1}{2+2}$$

$$= \frac{-1}{4}$$