

$$(23) \lim_{x \rightarrow 7} \frac{(\sqrt{x+2} - 3)(\sqrt{x+2} + 3)}{x-7} \cdot \frac{1}{\sqrt{x+2} + 3}$$

$$\lim_{x \rightarrow 7} \frac{x+2-9}{(x-7)(\sqrt{x+2} + 3)} = \lim_{x \rightarrow 7} \frac{x-7}{(x-7)(\sqrt{x+2} + 3)}$$

$$\lim_{x \rightarrow 7} \frac{1}{\sqrt{x+2} + 3} = \frac{1}{\sqrt{7+2} + 3}$$
$$= \frac{1}{3+3} = \boxed{\frac{1}{6}}$$

$$\boxed{25} \quad \lim_{x \rightarrow -4} \frac{\frac{x}{4} + \frac{1}{x} \cdot \frac{4}{4}}{4+x} = \lim_{x \rightarrow -4} \frac{\frac{x}{4x} + \frac{4}{4x}}{4+x}$$

$$\lim_{x \rightarrow -4} \frac{\cancel{4+x}}{4x} \cdot \frac{1}{\cancel{4+x}}$$

$$\lim_{x \rightarrow -4} \frac{1}{4x} = \boxed{\frac{1}{16}}$$

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$$21) \lim_{t \rightarrow 9} \frac{9-t}{3-\sqrt{t}} \cdot \frac{3+\sqrt{t}}{3+\sqrt{t}}$$

$$\lim_{t \rightarrow 9} \frac{\cancel{(9-t)}(3+\sqrt{t})}{9-t}$$

$$\lim_{t \rightarrow 9} \frac{9-t}{3-\sqrt{t}} = \lim_{t \rightarrow 9} \frac{\cancel{(3-\sqrt{t})}(3+\sqrt{t})}{3-\sqrt{t}} = \boxed{6}$$

$$x^2 - 25$$

(19)

$$\lim_{x \rightarrow -2} \frac{x+2}{x^3+8}$$

$$x^3+y^3=(x+y)(x^2-xy+y^2)$$

$$\lim_{x \rightarrow -2} \frac{\cancel{x+2}}{\cancel{(x+2)}(x^2-2x+4)}$$

$$\lim_{x \rightarrow -2} \frac{1}{x^2-2x+4} = \frac{1}{(-2)^2-2(-2)+4}$$

$$= \frac{1}{4+4+4} = \boxed{\frac{1}{12}}$$

$$x+2 \overline{) x^3 + 8}$$

$x^2 - 2x + 4$

$$\begin{array}{r|rrrr} -2 & 1 & 0 & 0 & 8 \\ & \downarrow & -2 & 4 & -8 \\ \hline & 1 & -2 & 4 & 0 \\ & x^2 & x & c & \cancel{0} \end{array}$$