

Oefening limieten 5**ANTWOORDEN**

$$1. \lim_{x \rightarrow \frac{2}{3}} \frac{4-6x}{3x^2+x-2} = \lim_{x \rightarrow \frac{2}{3}} \frac{-2 \cdot (3x-2)}{(3x-2)(x+1)} = \lim_{x \rightarrow \frac{2}{3}} \frac{-2}{x+1} = \frac{-2}{1+\frac{2}{3}} = -1\frac{1}{5}$$

$$2. \lim_{x \rightarrow 2} \frac{x^2-4}{x^2+x-2} = \frac{0}{4} = 0$$

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

$$4. \lim_{x \downarrow 0} f'(x) = \cos 0 = 1$$

$$5. \lim_{x \downarrow \frac{1}{2}\pi} f'(x) = \sin \frac{1}{2}\pi = 1$$

$$6. \lim_{x \rightarrow \infty} \frac{2x^5 - 3x^2 + 5}{x^3 + 4x^5} = \frac{2}{4}$$

$$7. \lim_{x \rightarrow \infty} (\sqrt{5-x} - \sqrt{4-x}) = \textit{kan niet}$$

$$8. \lim_{x \downarrow 0} f'(x) = 1$$

$$9. \lim_{x \uparrow 1} f'(x) = -\frac{1}{\ln 2}$$

$$10. \lim_{x \rightarrow -\infty} (\sqrt{2x-x^2} - \sqrt{3+x-x^2}) = \textit{kan niet}$$