# Calculus Worksheet: Limits of Functions (1)

**Find the following limits** (no calculator)

1. $\lim_{x\to+\infty}\frac{x^2+2x-3}{-5x^2} = -\frac{1}{5}$

2. $\lim_{x\to 0}\frac{x^2-16}{x^2+2x-24} = \frac{(x+4)(x-4)}{(x+6)(x-4)} = \frac{4}{6} = \boxed{\frac{2}{3}}$

**Find the following limits** (calculator allowed)

* Graph

3. $\lim_{x\to-\infty}\frac{x-1}{|x+2|} = -1$

4. $\lim_{x\to 2^-}\frac{x^2+x-6}{|x-2|} = -5$

5. $\lim_{x\to -1}\frac{x^2-4x-5}{|x+1|}$ = does not exist

6. $\lim_{x\to -3^+}\sqrt[3]{x+3}\ln(x+3)$

$= -1$