SECTION 4.4: LIMITS OF INDETERMINATE TYPE AND L'HOSPITAL'S RULE

Evaluate:

1. $\lim_{x\to 2} \dfrac{x^2-4}{x^2-5x+6}$ (type _____)

2. $\lim_{x\to 0} \dfrac{\sin x}{x}$ (type _____)

3. $\lim_{x\to 0} \dfrac{\tan(5x)}{\sin(3x)}$ (type _____)

4. $\lim_{u\to \infty} \dfrac{e^{u/10}}{u^2}$ (type _____)

5. $\lim_{x\to 0} \dfrac{\cos(4x)}{e^{2x}}$ (type _____)

6. $\lim_{x\to 0} \dfrac{xe^x}{2^x - 1}$ (type _____)

7. $\lim_{x\to 1^+} \big(\ln(x^4 - 1) - \ln(x^9 - 1)\big)$ (type _____)

8. $\lim_{x\to \infty} \sqrt{x}e^{-x/2}$ (type _____)

9. $\lim_{x\to 0^+} (1 + \sin(2x))^{1/x}$ (type _____)