

MATH 220: CALCULUS I
WORKSHEET 6
JANUARY 31, 2013

Friendly reminder: You are expected to know the trig identities for $\cos(2\theta)$, $\sin(2\theta)$ as well as the ones of the $\sin^2 \theta + \cos^2 \theta = 1$ variety.

1. Evaluate the limit, if it exists:

(a) $\lim_{x \rightarrow 2} \frac{\sin x}{x^2}$

(b) $\lim_{x \rightarrow 3} \frac{x^2 - 9}{x^3 - 5x^2 + 6x}$

(c) $\lim_{h \rightarrow 0} \frac{(2+h)^2 - 8}{h}$

(d) $\lim_{h \rightarrow 0} \frac{\frac{1}{(x+h)^2} - \frac{1}{x^2}}{h}$

2. Use the squeeze theorem to show that $\lim_{\theta \rightarrow 0} \sin(\theta) \sin(1/\theta) = 0$