

Exam type questions for sections 7.3-7.6

MATH 140.

Credit is given only if you pick the correct answer *and* you show your work.

1. Evaluate

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

- A.) 0 B.) $\pi/2$ C.) $\pi/3$ D.) $\pi/4$ E.) $\pi/6$ F.) π

2. Evaluate

$$\int_0^2 \frac{t}{\sqrt{16-t^4}} dt.$$

- A.) 0 B.) $\pi/2$ C.) $\pi/3$ D.) $\pi/4$ E.) $\pi/6$ F.) π

3. Consider the function

$$f(x) = \sinh(x^2 + 2x + 1).$$

What is $f'(0)$?

- A.) 0 B.) 1 C.) e D.) $e + \frac{1}{e}$ E.) π F.) $\pi/2$