

CALCULUS II READINESS SELF-DIAGNOSTIC

The following questions are designed to help you self-assess your readiness for Calculus II. These items cover topics from prior mathematics courses that you may need to review in order to maximize your success.

Compute the indicated derivative for each of the following:

1) $g(x) = x^3 + x$, $g'(x) =$

2) $\frac{d}{dt} \left(\frac{1}{t^7} \right) =$

3) $y(x) = \cos x$, $y''(x) =$

4) $\frac{d}{d\theta} (\tan \theta) =$

5) $f(x) = x^7 \sin x$

6) $h(x) = \frac{6x^2}{x^2+5x+1}$, Find $h'(x)$

7) $\frac{d}{dt} (e^{5t}) =$

8) $g(t) = t(2t - 1)^8$, Find $g'(1)$

9) What value of m makes the following statement correct? If $f(2) = 3$ and $f(4) = 11$, where $f(x)$ is differentiable, then the graph f must have a tangent line of slope m .

10) Complete a partial fractions decomposition for $\frac{3x+2}{x^2+x}$.