

CHAIN RULE – MULTIPLE-CHOICE WORKSHEET

Name: _____ Date: _____

Instructions: Use the chain rule to find the indicated derivative. Choose the best answer for each question.

1. If $q = (2r - r^2)^{1/3}$, find dq/dr .

- A. $(2r - r^2)^{-2/3}$
- B. $3(2r - r^2)^{-2/3}(2 - 2r)$
- C. $(2 - r) / [3(2r - r^2)^{1/3}]$
- D. $(2 - 2r) / [3(2r - r^2)^{2/3}]$

2. If $s = \sin(3\pi t/2) + \cos(3\pi t/2)$, find ds/dt .

- A. $(3\pi/2)[\sin(3\pi t/2) - \cos(3\pi t/2)]$
- B. $(3\pi/2)[\cos(3\pi t/2) - \sin(3\pi t/2)]$
- C. $\cos(3\pi t/2) - \sin(3\pi t/2)$
- D. $(3\pi/2)[\cos(3\pi t/2) + \sin(3\pi t/2)]$

3. If $r = 6(\sec \theta - \tan \theta)^{3/2}$, find $dr/d\theta$.

- A. $9\sqrt{(\sec \theta - \tan \theta)(\sec \theta \tan \theta + \sec^2 \theta)}$
- B. $6\sqrt{(\sec \theta - \tan \theta)(\sec \theta \tan \theta - \sec^2 \theta)}$
- C. $9\sqrt{(\sec \theta - \tan \theta)(\sec \theta \tan \theta - \sec^2 \theta)}$
- D. $(9/2)(\sec \theta - \tan \theta)^{1/2}$