

Calculus Class Worksheet #1 Unit 8

For each of the following functions, express dy in terms of x and dx .

1. $y = x^4$

2. $y = 5x^2 - 3x + 2$

3. $y = \cos x$

$dy =$ _____

$dy =$ _____

$dy =$ _____

Use differentials to approximate each of the following.

4. $\sqrt{8.5}$

5. $\sqrt[3]{27.2}$

Use differentials to answer each of the following question. Show your work neatly organized.

6. A brass sphere with a diameter of 3 centimeters is given a gold plating which is 1.5 millimeters thick. What is the approximate volume of gold used?

(For a sphere, $V = (4/3)\pi r^3$.)