Lecture 26: April First Worksheet

Implicit differentiation

1 Find the slope of $y'(x)$ if $2x^3 - y^3 = y$ at the point $(1, 1)$.

2 Find the derivative of $y(x) = x^{1/5}$ by differentiating $y^5 = x$.

3 The equation $y = x$ relates two quantities and defines y in terms of x. Assume $x = 2$ find

$$\frac{d}{dx} y \ .$$

Hint. This problem tries hard to be a April first joke but does not quite succeed.