

MATH 100 – WORKSHEET 21
ANTIDERIVATIVES

1. WARMUP

- (1) (Multiplication)
 - (a) Calculate $7 \times 8 =$
 - (b) Find a, b such that $ab = 15$.

- (2) (Trig functions)
 - (a) Calculate $\sin \frac{\pi}{3}$.
 - (b) Find all θ such that $\sin \theta = 1$.

- (3) Simple differentiation
 - (a) Find one f such that $f'(x) = 1$.
 - (b) Find *all* such f .
 - (c) Find the f such that $f(7) = 3$.

2. ANTIDIFFERENTIATION BY MASSAGING

(1) Find f such that $f'(x) = -\frac{1}{x}$.

(2) Find f such that $f'(x) = \cos x$.

(3) Find all f such that $f'(x) = \cos 3x - \frac{2}{x}$.

(4) Find f such that $f'(x) = 2x^{1/3} - x^{-2/3}$ and $f(1000) = 5$.

(5) Find f such that $f''(x) = \sin x + \cos x$, $f(0) = 0$ and $f'(0) = 1$.

(6) A cannonball is dropped off a tower of height H . Suppose that it starts from rest at the top of the tower and that its acceleration is constant (equal to g). When does it hit the ground?