

5.5 Notes Day 2

Clothes U Wear posts discounts on social media. The store allows customers to use multiple discounts. They are offering '\$5 off next purchase' and '10% off next purchase.'

Which order should you present coupons?

$$f(x) = x - 5$$

$$g(x) = x - 0.1x = 0.9x$$

$$(f \circ g)(x)$$

means 1st $g(x)$
2nd $f(x)$

$$f(g(x)) = 0.9x - 5$$

Saves more \$

$$(g \circ f)(x) = g(f(x))$$

$$= 0.9(x - 5)$$

$$= 0.9x - 4.5$$

A \$30 shirt

$$(f \circ g)(x) = 0.9(30) - 5 = \$22$$

$$(g \circ f)(x) = 0.9(30) - 4.5 = \$22.5$$

As a member of the Games Shop Rewards program, you get a 20% discount on purchases. All sales are subject to a 6% sales tax.

discount $d(x) = x - 0.2x = 0.8x$

tax: $t(x) = 1.06x$

which to apply 1st?

$$(t \circ d)(x) = 1.06(0.8x)$$

$$(t \circ d)(x) = 0.848x$$