

# MATH 262

## Section 3.7

Day 24

1. Let  $X$  have density  $f_X(x) = \frac{x}{2}$  for  $0 \leq x \leq 2$ , and let  $Y = X^2$ . What is the density of  $Y$ ?

2. Let  $X$  have density  $f_X(x) = 2x$  for  $0 \leq x \leq 1$ , and let  $Y = e^{-X}$ . What is the density of  $Y$ ?

3. Let  $X$  have density  $f_X(x) = 2x$  for  $0 \leq x \leq 1$ , and let  $Y = 2 - X^2$ . What is the density of  $Y$ ?

4. Let  $X \sim N(0, 1)$  and  $Y = X^2$ . What is the distribution of  $Y$ ?