

Present neatly. Justify for full credit. No Calculators.

Name _____ Score _____ ~10 minutes / A

1. Solve:

$$e^x - 2xe^x = 0$$

2. Sketch the graph of the function. State the domain and range.

$$g(x) = 3 + e^{x-2}$$

$$\textcircled{1} \quad e^x - 2xe^x = 0$$

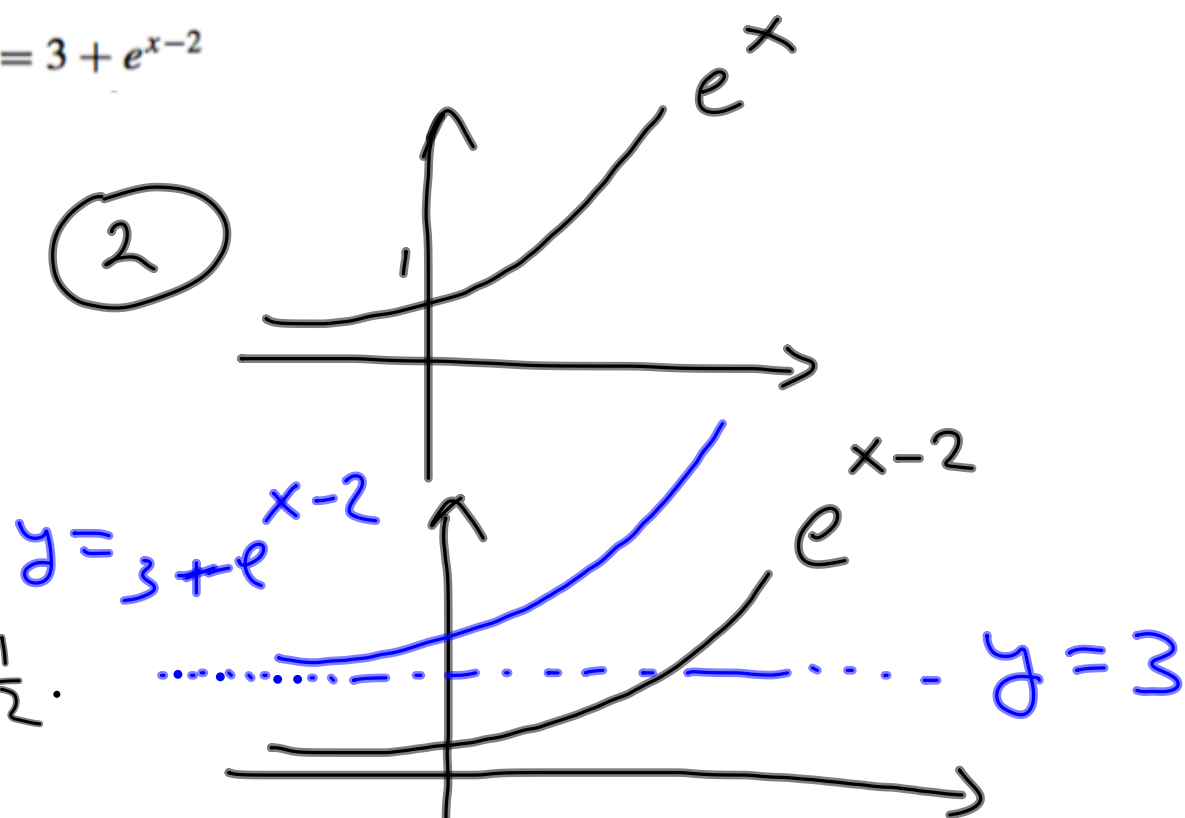
$$e^x [1 - 2x] = 0$$

\downarrow
 $\neq 0$

$$1 - 2x = 0$$

$$1 = 2x \rightarrow x = \frac{1}{2}$$

$\textcircled{2}$



D: $(-\infty, \infty)$ all reals

R: $(3, \infty)$

Present neatly. Justify for full credit. No Calculators.

Name _____ Score _____ ~20 minutes / F

1. Solve:

$$xe^{-x} + 2e^{-x} = 0$$



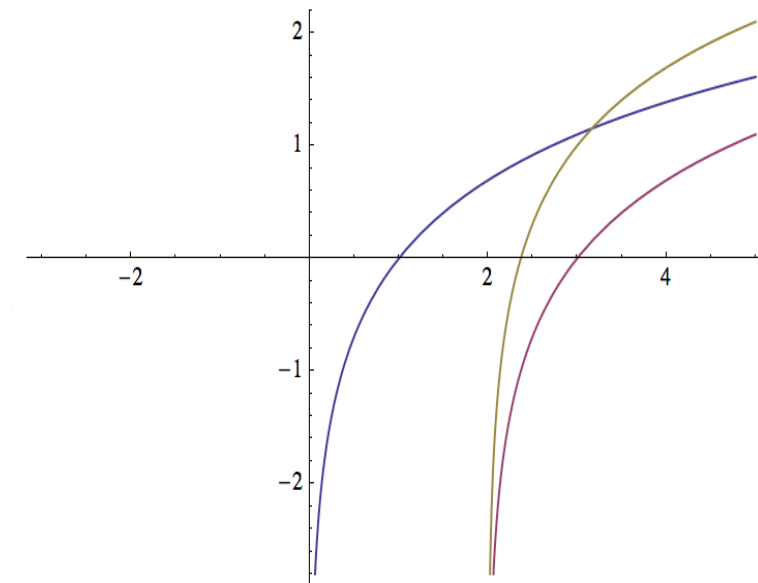
$$e^{-x}(x+2) = 0$$

$$x = -2$$

2. Sketch the graph of the function. State the domain and range.

$$f(x) = 1 + \ln(x - 2)$$

Plot[Log[x], Log[x - 2], 1 + Log[x - 2], {x, -3, 5}]



2. Order of transformations of $y = \ln(x)$
 Horizontal shift of 2 units to the right.
 Vertical shift of 2 units upward.

Domain: $x > 2$
 Range: all reals