Vocabulary:

1. Exponential function:

2. Base:

3. e:

$$y = a \, b^{(x-h)} + k \quad \overset{base}{}$$

$a \to$ width
    a fraction = wider
    a whole # = narrower
   − reflect

$K \to$ up/down
   + up
   − down

$h \to$ left/right
   + → left, − → right

---

4. $y = -2^{x+1} + 1$

II   I   III   IV
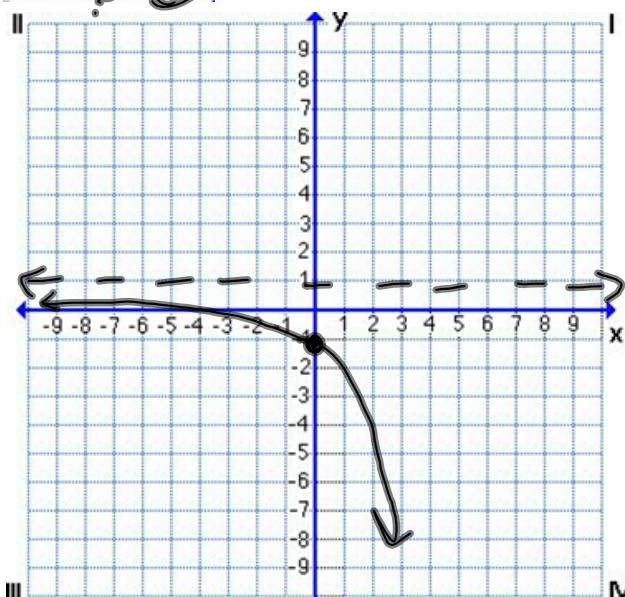
*use calculator for y-intercept (trace feature) and shape.

Transformations: reflect, left 1, up 1

x-int: _____   y-int: $(0, -1)$

Asymptote: $y = 1$

Domain: $(-\infty, \infty)$   Range: $(-\infty, 1)$

Growth   or   (Decay) (circle one)

*asymptote controls the boundary line and the range.
*asymptote comes from the movement up/down.

**1**

5. ~~\\\/\/\/\/\/\/~~ $y = e^{x-2} + 1$

II   |   I

III   |   IV
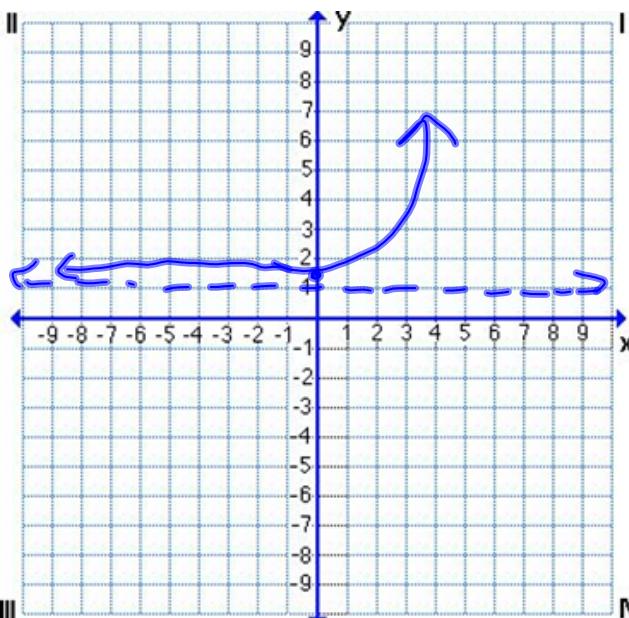
Transformations: right 2, up 1

x-int: ~~\\\/\/\/~~    y-int: $(0, 1.(4))$

Asymptote: $y = 1$

Domain: $(-\infty, \infty)$   Range: $(1, \infty)$

Growth   or   Decay   (circle one)