Exponential Equations

What does an exponential function look like?

ex) $f(x) = a \cdot b^x$ (a: stretch factor)

translations: $\rightarrow 2$, $\downarrow 5$

$g(x) = a \cdot b^{x-2}$

$h(x) = a \cdot b^x - 5$

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$f(x) = 2^x$

$f(0) = 2^0$

$= 1$

$f(1) = 2^1 = 2$

(1, b)

(0, 1)

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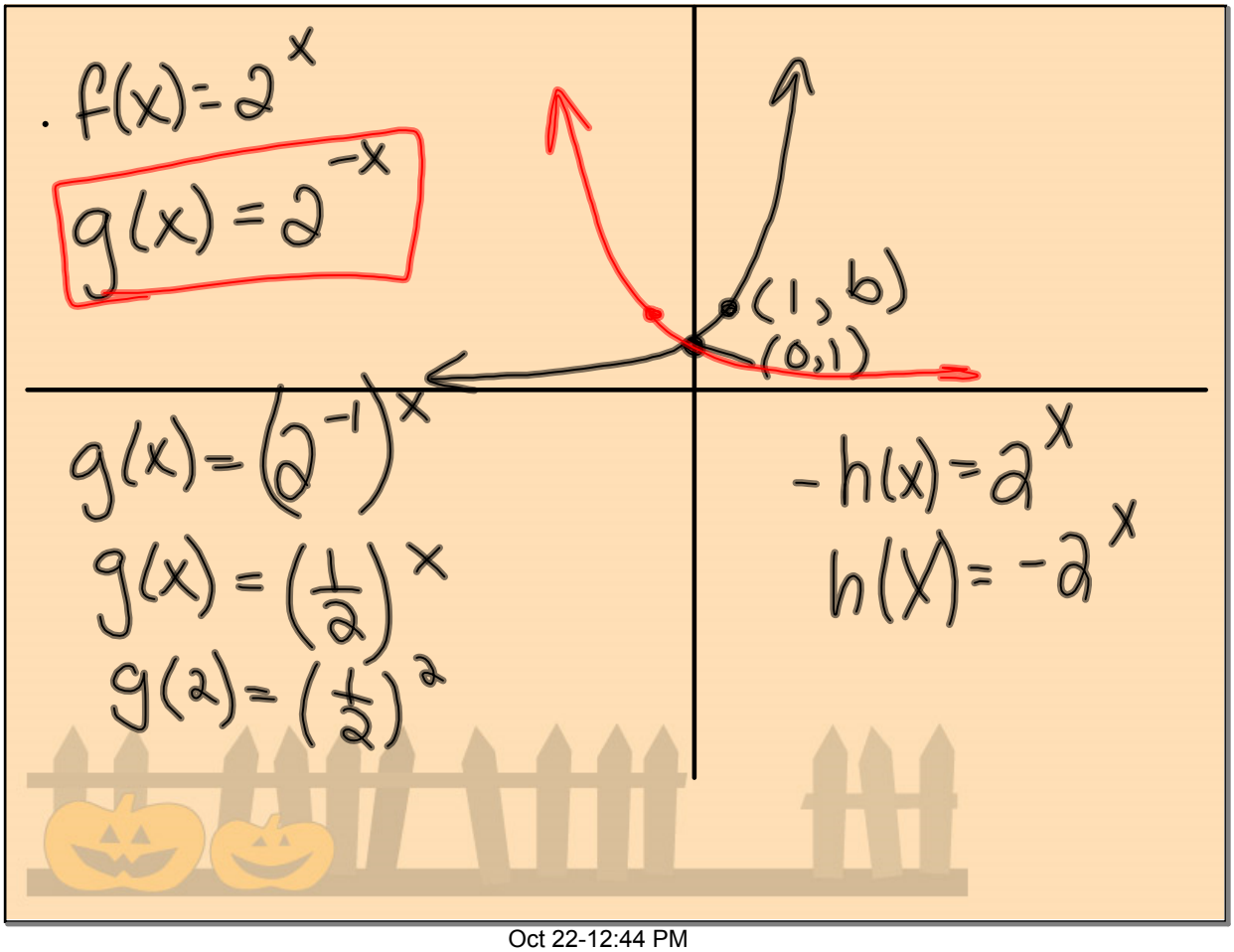

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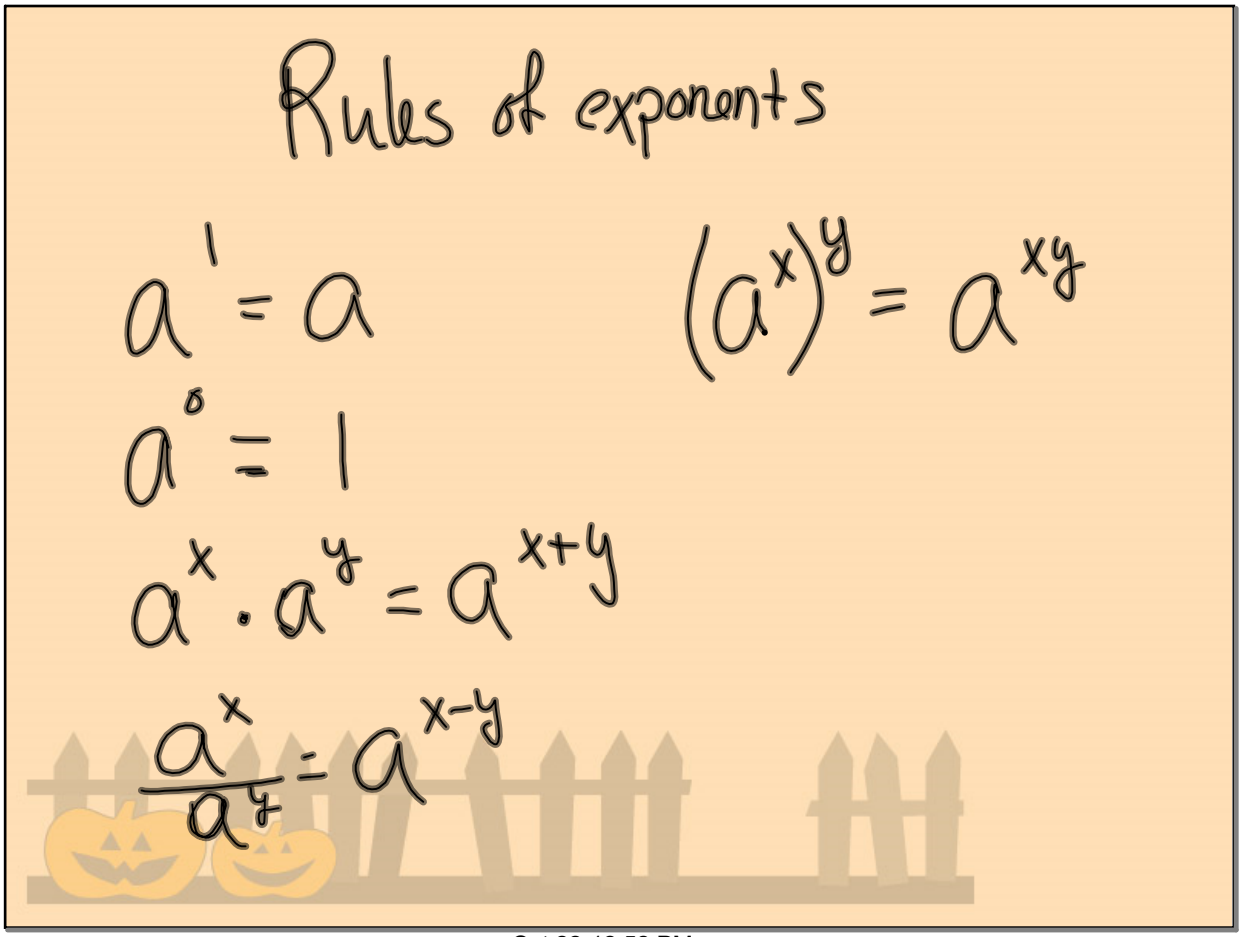

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$$\frac{x^3}{x^5} = x^{-2}$$

$$\frac{\cancel{x}\cancel{x}\cancel{x}}{\cancel{x}\cancel{x}\cancel{x}xx} = \frac{1}{x^2}$$

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$$\sqrt{x^1} = x^{\frac{1}{2}}$$

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

$$\sqrt{x}\sqrt{x} = x$$

$$x^{\frac{1}{3}} x^{\frac{1}{3}} x^{\frac{1}{3}} = x^1$$

$$\sqrt[3]{x}\sqrt[3]{x}\sqrt[3]{x} = x$$

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$$125^{-\frac{2}{3}} = 125^{-1\cdot 2\cdot \frac{1}{3}}$$

$$= 5^{-1\cdot 2}$$

$$= 25^{-1}$$

$$= \frac{1}{25}$$

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$$(-8)^{-\frac{5}{3}} = (-8)^{-1\cdot 5\cdot \frac{1}{3}}$$

$$= (-2)^{-1\cdot 5}$$

$$= -32^{-1}$$

$$= \frac{1}{-32} = -\frac{1}{32} = -\frac{1}{32}$$

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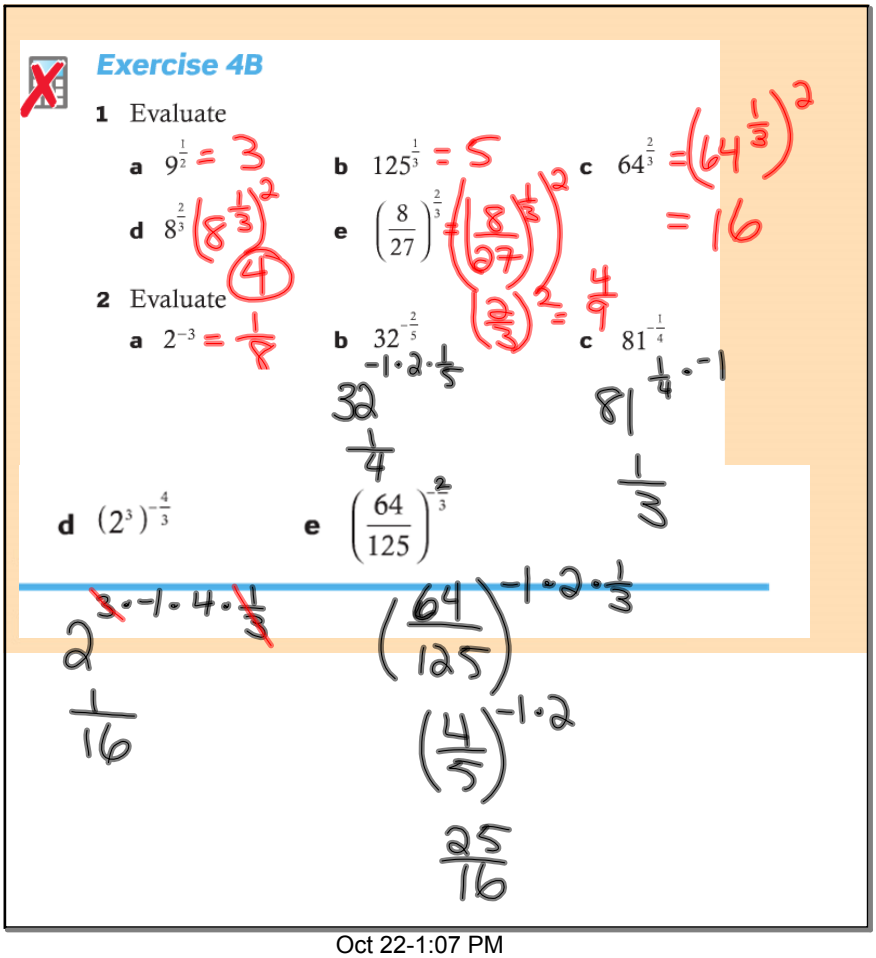

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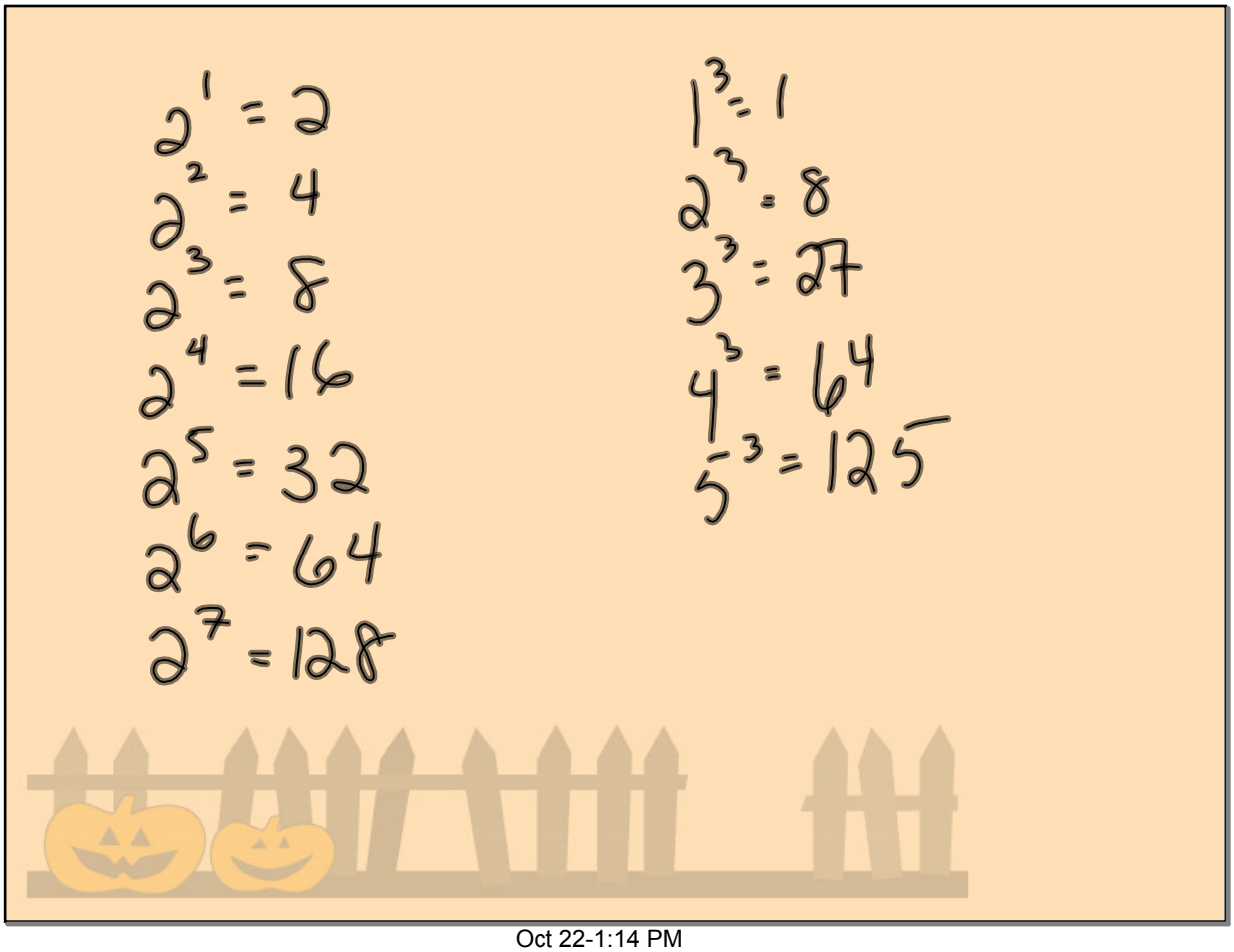

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