

Bellwork Alg 2 Tuesday, May ⁵~~2~~, 2020

1. Solve for x to the nearest hundredth. $6(2)^{4x} - 8 = 25$

2. The population of a city has been increasing 4.1% each year. The population in 2018 was 290,000. Find the population in 2010 to the nearest whole number.

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~~+8~~ ~~+8~~

$$\frac{6(2)^{4x}}{6} = \frac{33}{6}$$

$$2^{4x} = 5.5$$

$$\frac{\log_2 5.5}{4} = \frac{4x}{4} \Rightarrow \boxed{x = 0.61}$$

2. The population of a city has been increasing 4.1% each year. The population in 2018 was 290,000. Find the population in 2010 to the nearest whole number.

find the base: $100 + 4.1\% = 104.1\%$

$$\boxed{b = 1.041}$$

$$y = 290,000(1.041)^x \quad x = \# \text{ yrs since 2018}$$

for 2010 $x = -8$ $2010 - 2018 = -8$

$$y = 290,000(1.041)^{-8} = \boxed{210,277}$$