

Exponential Functions Homework

1. a. $(0, 42)$ b. increasing

2. a. $(0, 0.8)$ b. increasing

3. a. $(0, 450)$ b. decreasing

4. a. $(0, 1/2)$ b. decreasing

5.

x	y
0	3
1	4.5
2	6.75
3	10.125
4	15.188
5	22.781

7. $y = 8(1.05)^x$

8. $y = 250(1.03)^x$

9. $y = 2000(1.18)^x$

10. $y = 42(0.98)^x$

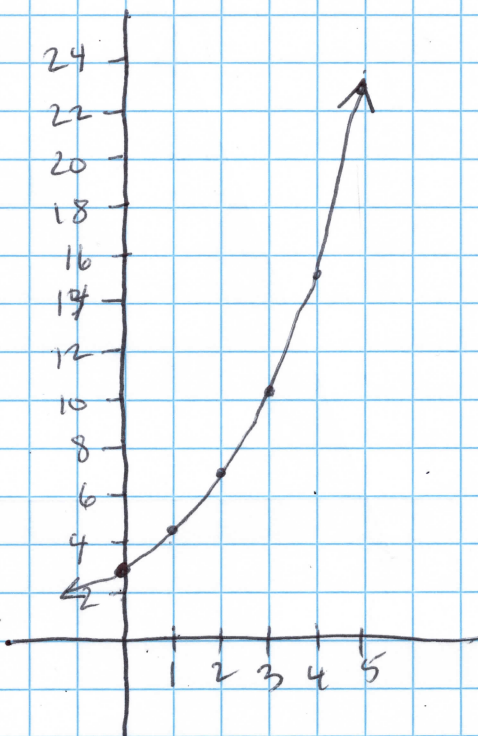
6.

x	y
0	10
1	6
2	3.6
3	2.16
7	0.2799
10	0.0605

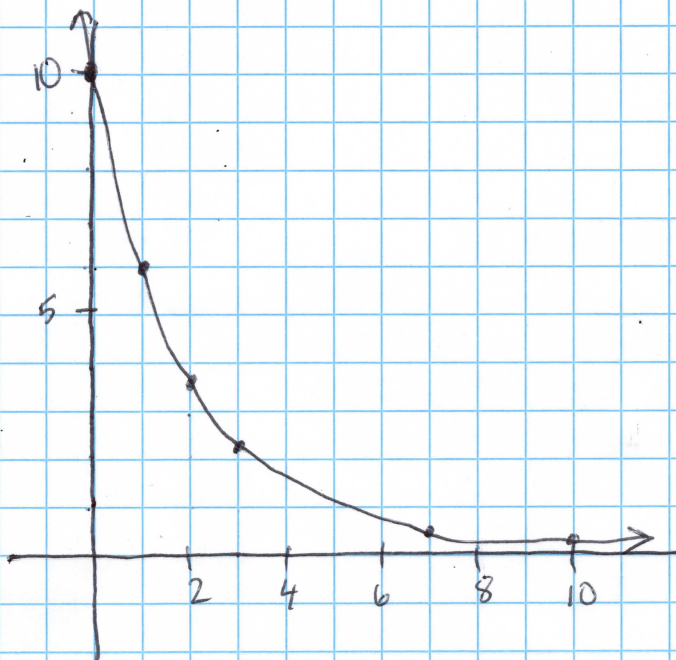
11. $y = 83(0.88)^x$

12. $y = 24(0.75)^x$

⑤



⑥



13. a. $y = 5000(1.07)^x$

b. $y = 5000(1.07)^8$

$$y = \$8590.93$$

14. a. $y = 80(0.96)^x$

b. $y = 80(0.96)^{12}$

$$y = 49.02 \text{ grams}$$

15. a. $y = 120(1.36)^x$

b. $y = 120(1.36)^4$

$$y = 411 \text{ bacteria}$$

16. a. $y = 5300(0.97)^x$

b. $y = 5300(0.97)^{15}$

$$y = 3356.23 \text{ acres}$$

$$19. \quad a. \quad y = 1000 \cdot b^x$$

$$\frac{1052}{1000} = \frac{1000}{1000} \cdot b^1$$

$$1.052 = b$$

$$y = 1000(1.052)^x$$

$$b. \quad y = 1000(1.052)^{10} = \$1660.19$$

$$20. \quad a. \quad y = 50 \cdot b^x$$

$$30 = 50 \cdot b^5$$

$$\frac{30}{50} = b^5$$

$$0.6 = b^5$$

$$\sqrt[5]{0.6} = \sqrt[5]{b^5}$$

$$0.9029 = b$$

$$y = 50(0.9029)^x$$

$$b. \quad y = 50(0.9029)^{10} = 18.00 \text{ kg}$$

17. a. $y = 32 \left(1 + \frac{1}{12}\right)^x$

b. $y = 32 \left(1 + \frac{1}{12}\right)^{10}$

$$\boxed{y = 71.25 \text{ inches}}$$

18. a. $y = 80(b)^x$

$$2000 = 80 \cdot b^2$$

$$\frac{2000}{80} = b^2$$

$$25 = b^2$$

$$5 = b$$

$$\boxed{y = 80 \cdot 5^x}$$

Monday = 0

Tuesday = 1 day

Wednesday = 2 days

b. $y = 80 \cdot 5^4 = \boxed{50,000 \text{ bacteria}}$