Chapter 3 Section 3
MA1032 Data, Functions & Graphs

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Characteristics of $Q = ab^t$

$$f(t) = 20(1.4)^t$$
$$g(t) = 28(1.2)^t$$
$$h(t) = 15(0.6)^t$$
$$k(t) = 10(0.8)^t$$

Mini Summary

- Changing initial values
- Changing growth factor

t	9	12	15	18	21
$h(t)$	120	216	389	700	1260

Problems #21 & #22

1. For which value(s) of a and b is $y = ab^x$ an increasing function? A decreasing function? Concave up?

2. Compare $f(x) = a^x$ where $a > 1$ and $g(x) = b^x$ where $0 < b < 1$. Include graphs in your answer.

Problem #16

Let $P = f(t) = 1000(1.04)^t$ be the population of a community in the year t.

1. Evaluate $f(0)$ and $f(10)$. What do these expressions represent in terms of the population?

2. If the percentage growth rate remains constant, approximately when will the population reach 2500 people?

Summary

1. Initial value & graph
2. Growth factor & graph
3. Horizontal Asymptotes