

Reading Questions for Section 9.6

(7 pts)

Name _____

Due: _____

- (1) 1. A positive increasing exponential function $f(x) = ab^x$ eventually grows larger than any power function $y = kx^p$ as $x \rightarrow \infty$.
- A. True
B. False

- (1) 2. A positive decreasing exponential function $g(x) = ab^x$ eventually approaches zero faster than any positive decreasing power function $y = kx^p$ as $x \rightarrow \infty$.
- A. True
B. False

- (1) 3. Without using a calculator, order the values from the least to greatest:

$$3^{201}, \left(-\frac{1}{3}\right)^{-2000} 9^{100}, 9^{999}, 1^{500}$$

A. $9^{100} < 3^{201} < 1^{500} < 9^{999} < \left(-\frac{1}{3}\right)^{-2000}$

B. $1^{500} < 9^{100} < 3^{201} < 9^{999} < \left(-\frac{1}{3}\right)^{-2000}$

C. $1^{500} < 3^{201} < 9^{100} < 9^{999} < \left(-\frac{1}{3}\right)^{-2000}$

D. $\left(-\frac{1}{3}\right)^{-2000} < 1^{500} < 9^{100} < 3^{201} < 9^{999}$

- (1) 4. How does the text determine the total number of times that $f(x)=100x^3$ and $g(x) = x^4$ intersect?

- (1) 5. What is the total number of times that $f(x) = 100x^3$ and $g(x) = x^4$ intersect? ____

- (2) 6. Assume all global behavior (or end behavior) is shown in the first quadrant.

Which graph is $f(x) = 100x^3$? (A or B) _____

Which graph is $g(x) = x^4$? (A or B) _____

