

Student Name : **Gavin McRoy**Date: **10/17/2019 4:32 PM**Login Name : **GMCROY**Class Name : **MATH 1050/1051 Fall 2019**Review Questions

1. A pole that is 2.5 m tall casts a shadow that is 1.75 m long. At the same time, a nearby tower casts a shadow that is 42.5 m long. How tall is the tower? Round your answer to the nearest meter.

2. Rewrite each equation as requested.

(a) Rewrite as a logarithmic equation.

$$e^y = 7$$

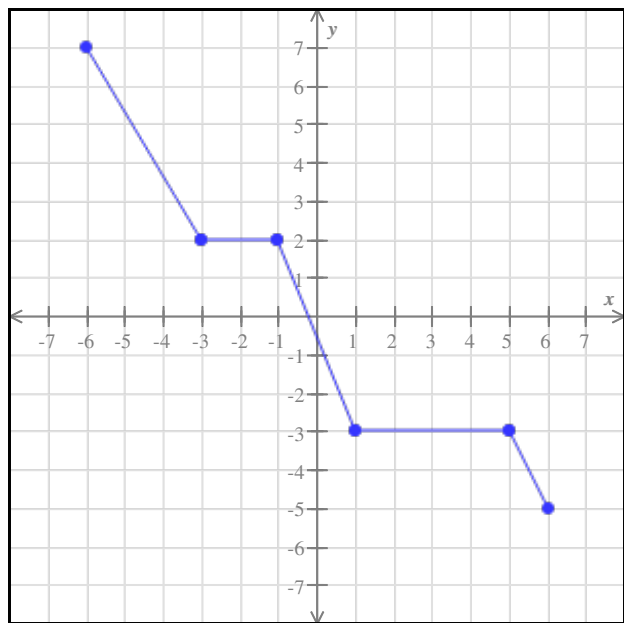
(b) Rewrite as an exponential equation.

$$\ln x = 3$$

3. Determine the interval(s) on which the function is constant.

Write your answer as an interval or list of intervals.

When writing a list of intervals, make sure to separate each interval with a comma and to use as few intervals as possible.



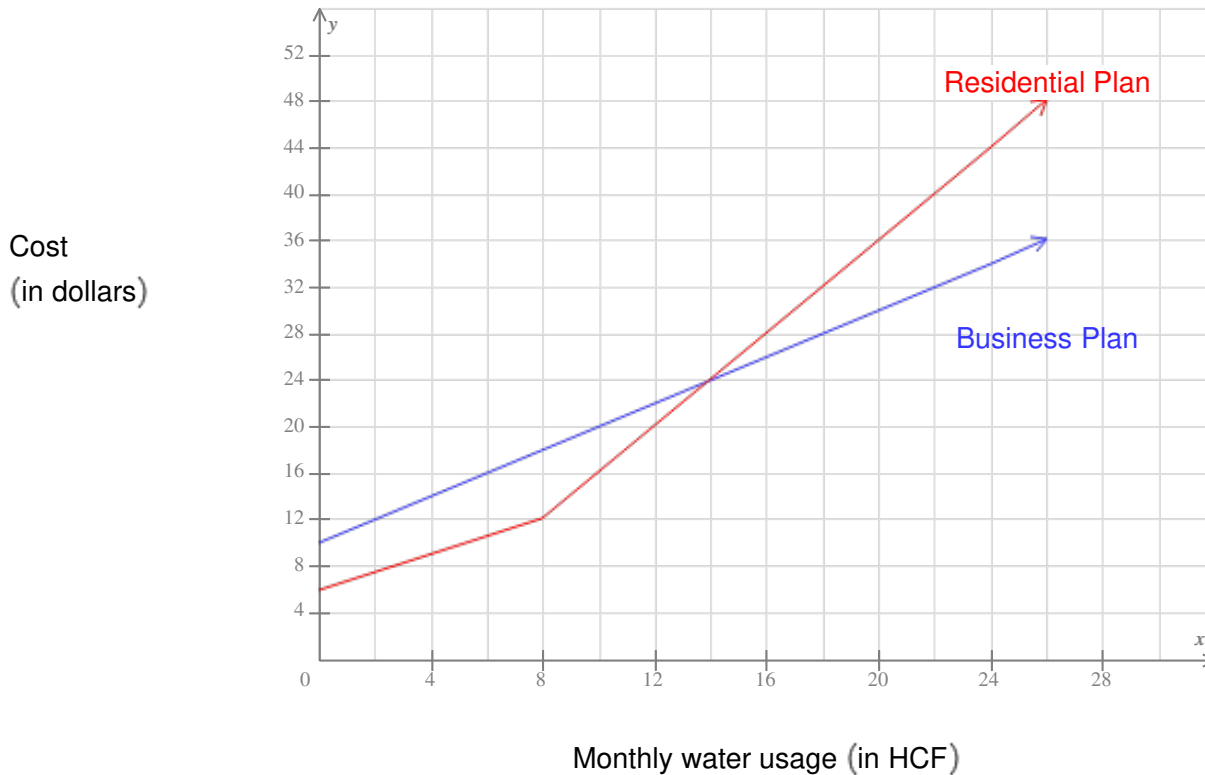
4. Factor completely.

$$9y^6 - 3y^5 - 30y^4$$

5. Solve for w .

$$|-3 - 3w| = |3w + 6|$$

6. The water company has a different monthly pricing plan for residential customers than for business customers. For each pricing plan, cost (in dollars) depends on water used (in hundreds of cubic feet, HCF), as shown below.



- (a) If the monthly water usage is 18 HCF, which plan costs more?

☐ Residential Plan ☐ Business Plan

How much more does it cost than the other plan?

\$ _____

- (b) For what amount of monthly water usage do the plans cost the same?

If the monthly water usage is more than this amount, which plan costs more?

☐ Residential Plan ☐ Business Plan

7. Rationalize the denominator and simplify.

$$\frac{2 - 4\sqrt{3}}{3 + \sqrt{3}}$$

8. Raina is choosing between two exercise routines.

In Routine #1, she burns 22 calories walking. She then runs at a rate that burns 10.5 calories per minute.

In Routine #2, she burns 48 calories walking. She then runs at a rate that burns 7.9 calories per minute.

For what amounts of time spent running will Routine #1 burn fewer calories than Routine #2?

Use t for the number of minutes spent running, and solve your inequality for t .

9. Suppose that the functions h and g are defined as follows.

$$h(x) = x - 7$$

$$g(x) = (x - 5)(x - 1)$$

(a) Find $\left(\frac{h}{g}\right)(2)$.

(b) Find all values that are NOT in the domain of $\frac{h}{g}$.

If there is more than one value, separate them with commas.

10. Rewrite the expression by factoring out $(w - 6)$.

$$7w(w - 6) - 5(w - 6)$$