PRINT NAME

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Excellence
Bonus   1

Score   27

Put answers in the boxes provided. **Show high quality work** for **all answers**. Points may be awarded for this.
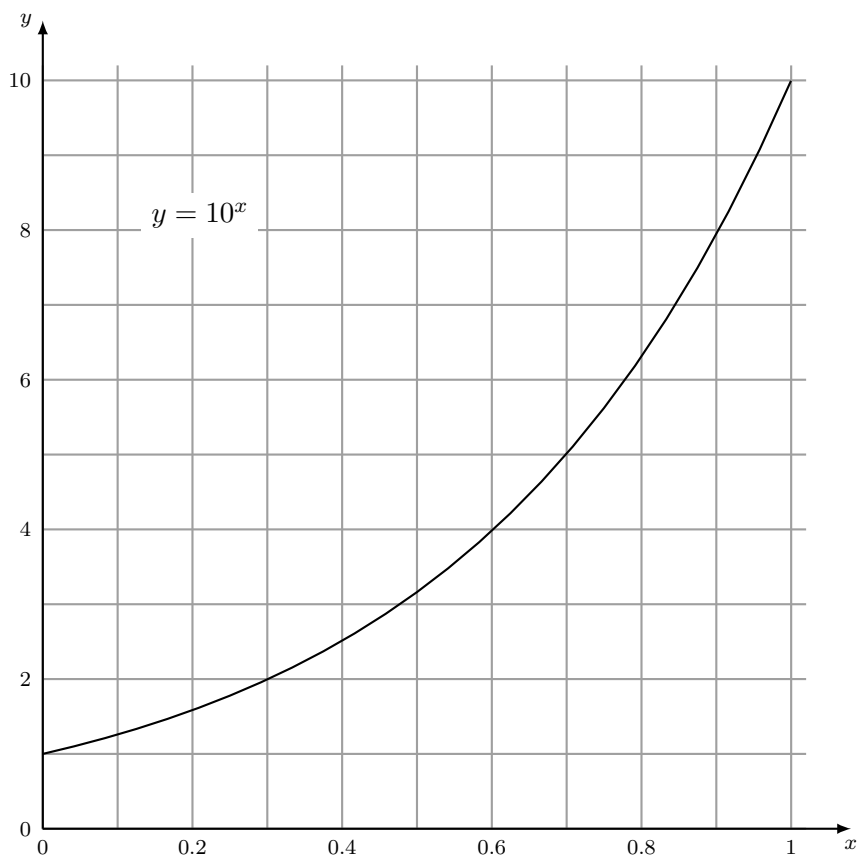
TA: ☐ Garo   ☐ Sam   ☐ Trevor   **Section Time:** ☐ 8am   ☐ 6pm
                                                               ☐ 5pm   ☐ 7pm

1. [/6] Use the graph given to find

(a) $\log(374) =$

(b) $10^{3.72} =$

(c) $\log(100 \times 378) =$

$y = 10^x$

2. [/3] Solve the following equation. Leave logs in your answer.

$$3 \times 6^{5x} = 8 + 4$$

$$x = \boxed{}$$

3. [/6] (Show work! Draw a labeled diagram!)
Line A goes through $(1, 5)$ and $(3, 3)$. Line B has slope 2 and goes through $(2, 7)$.

(a) What is the equation of Line A? Give the answer in the form $y = mx + b$.
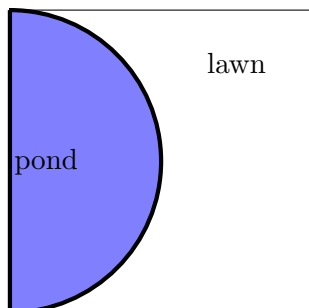
$$y = \boxed{}$$

(b) What is the equation of Line B? Give the answer in the form $y = mx + b$.

$$y = \boxed{}$$

(c) What are the coordinates of the point (x, y) where the lines $y = 2 + x$ and $y = 6 - x$ intersect?

$$(x, y) = \boxed{}$$

4. [/6] A *square garden* consists of a semicircular pond and the rest is lawn. The length of each side of the square is t.

lawn

pond

perimeter of pond
shown **thick**

(a) Find the area of the pond. This answer will only involve t.

pond area =

(b) Find the perimeter of the pond. This answer will only involve t.

perimeter =

(c) If the area of the square is 400, find the area of the lawn. This answer will *not* involve t.

lawn area =

5. [/6] Can A contains 90% red paint and the rest is blue. Can B contains 20% red paint and the rest is blue.

(a) If 5 ounces from A are mixed with 5 ounces from B, how many ounces of red paint are in the result?

oz

(b) If x ounces from A are mixed with $10 - x$ ounces from B, how many ounces of red paint are in the result?

oz

(c) If some of A and B are mixed to produce 10 ounces of a paint that is 70% red, how many ounces of A are used?

oz