Math 34A Winter 2020
Old Midterm 2 #3

No calculators

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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

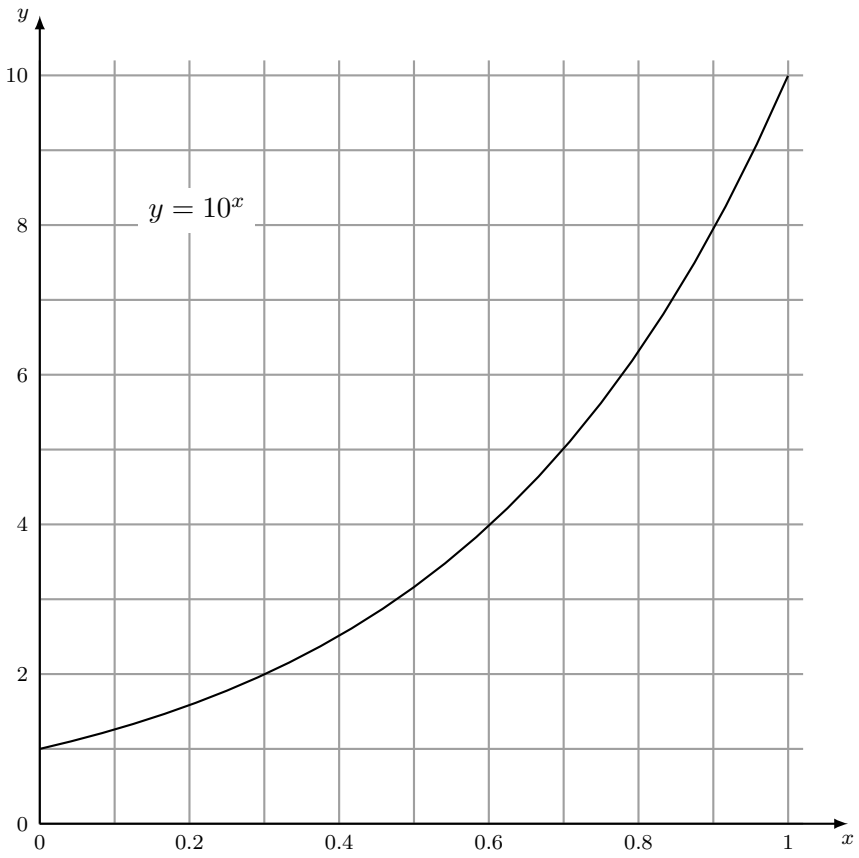
Section Time: ☐ 8am ☐ 6pm ☐ 5pm ☐ 7pm

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

(a) $\log(385) =$ ____

(b) $10^{4.85} =$ ____

(c) $\log(1/2.7) =$ ____



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

$$7^{3x+4} = 17$$

$x =$ [ ]

3. [/6] (Show work! Draw a labeled diagram!)
Line A goes through $(0, 4)$ and $(4, 5)$. Line B has slope 2 and goes through $(2, 3)$.

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

$y =$ [ ]

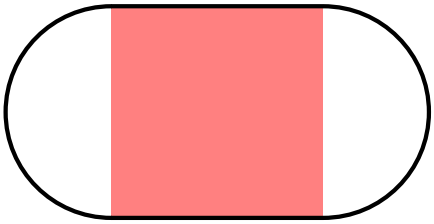
(b) What is the equation of Line B? Give the answer in the form $y = mx + b$.

$y =$ [ ]

(c) What are the coordinates of the point (x, y) where the lines $y = 1 + x$ and $y = 4 + 2x$ intersect?

$(x, y) =$ [ ]

4. [/6] A garden is in the shape of a square with semicircles along two sides. The diameter of each semi-circle is t.



perimeter shown ***thick***
garden is everything inside perimeter

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

area = $\boxed{}$

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

perimeter = $\boxed{}$

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

perimeter = $\boxed{}$

5. [/6] Alloy A is 50% silver and the rest is gold. Alloy B is 20% silver and the rest is gold. (Alloy means *mixture*.)

(a) If 50 grams of A are mixed with 50 grams of B, what is the percentage of silver in the result?

%

(b) If x grams of A are mixed with $100 - x$ grams of B, what is the percentage of silver in the result?

%

(c) If some of A and B are mixed to produce 100 grams of alloy which is 40% silver, how many grams of A are used?

grams