

No calculators

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Excellence
Bonus

1

Score

23

Put answers in the boxes provided. **Show high quality work** for **all answers**. Points may be awarded for this.

TA: ☐ Garo ☐ Sam ☐ Trevor

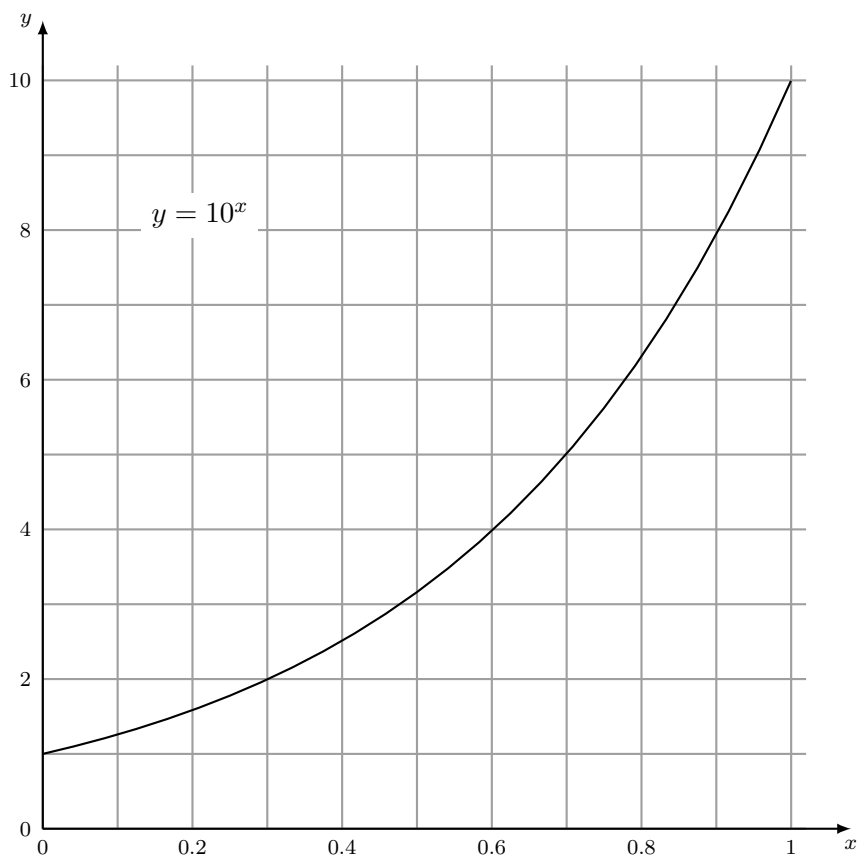
Section Time: ☐ 8am ☐ 6pm
☐ 5pm ☐ 7pm

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

(a) $\log(3450) =$

(b) $10^{-2.25} =$

(c) $\log(0.45^{10}) =$



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

$$5^{3x+1} + 2 = 9$$

$x =$

3. [/5] (Show work! Draw a labeled diagram!)

Line A goes through $(0, 4)$ and $(2, 5)$. Line B goes through $(3, 2)$ and has twice the slope of line A .

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

$y =$

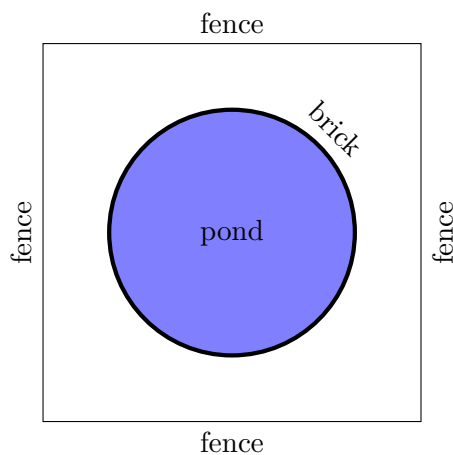
- (b) What is the equation of Line B ?

$y =$

- (c) What are the coordinates of the point (x, y) where line A intersects the line $y = 3 - x$?

$(x, y) =$

4. [/4] A *square patio* is surrounded by a fence. There is a circular brick wall around the pond.



The fence costs \$17 per foot length and the brick wall costs \$33 per foot length. Express the total cost of the fence and brick in terms of the *radius of the pond* and the *area of the square*.

cost =

5. [/5] There are 5 liters of blue paint.

- (a) If this is mixed with 7 liters of red paint, what percentage of the mixture is blue? (Leave your answer as a fraction (ex: $175/13\%$). No decimals.)

%

- (b) How many liters of red paint should be mixed with the blue to get a mixture that is 10% blue?

liters

- (c) How many liters of red paint should be mixed with the blue to get a mixture that is $x\%$ blue?

liters