PRINT NAME

Excellence
Bonus   1

No calculators

SIGN HERE

Score   26

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

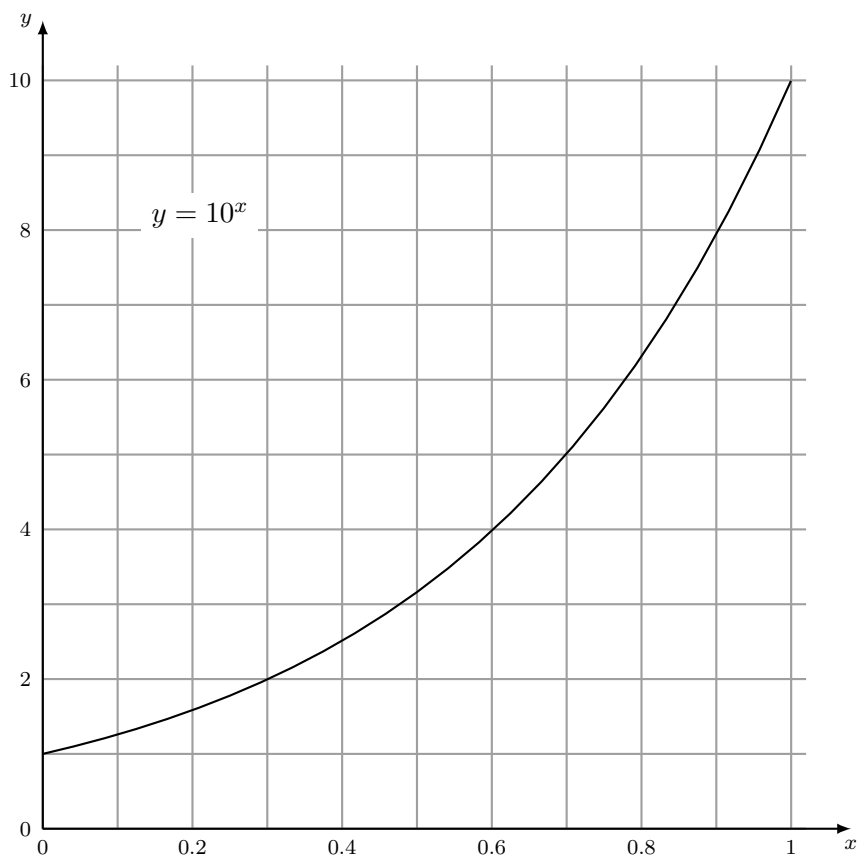**TA:** ☐ Garo   ☐ Sam   ☐ Trevor   **Section Time:** ☐ 8am   ☐ 6pm
☐ 5pm   ☐ 7pm

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

(a) $\log(35 + 42) =$

(b) $10^{3.65} =$

(c) $\log(\sqrt{8562}) =$

$y = 10^x$

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

$$7^{4x+1} = 2 + 3$$

$$x = \boxed{}$$

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

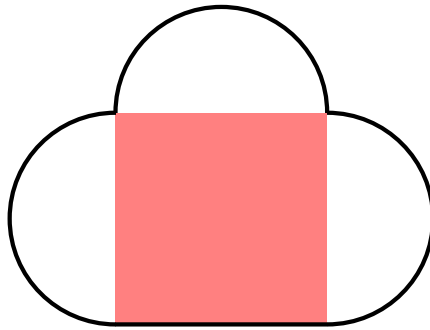(a) What is the equation of Line A? Give the answer in the form $y = mx + b$.

$$y = \boxed{}$$

(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 line A intersects the line $y - 3 = 0$?

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

4. [/6] A garden is in the shape of a square with semicircles along three sides.

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

The radius of each semi-circle is t.

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

area =

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

perimeter =

(c) If the area of the square is 100, find the perimeter of the garden. This answer will not involve t.

perimeter =

5. [/6] Initially can A contains 6 liters of red paint and can B contains 9 liters of blue paint. I pour $1/2$ of the red paint into can B.

(a) What is the percentage of red paint in can B?

%

(b) After mixing up can B, I pour $1/2$ of can B back into can A. How many liters of paint are now in can A?

liters

(c) How many liters of red paint are now in can A?

liters