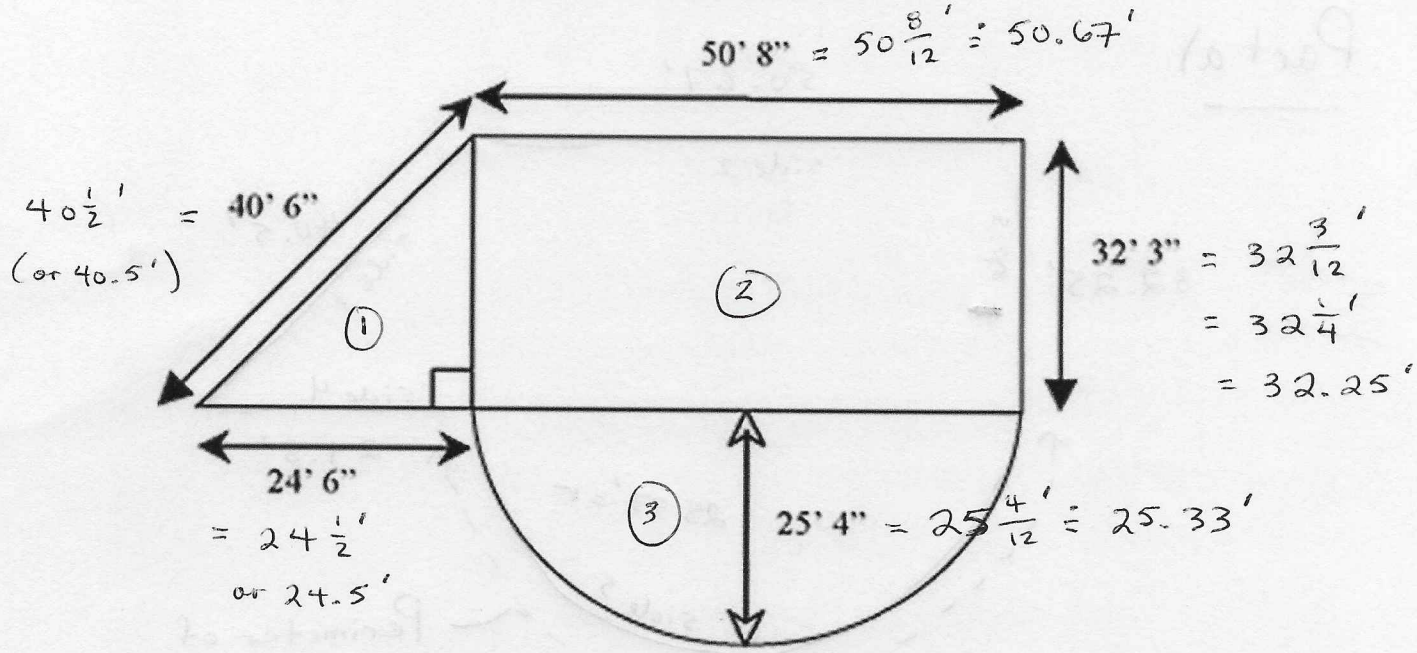
Name: Solutions (Answer Key)

Part a) Solution → (over)

Date: _____

MAP 4C **Perimeter & Area of Composite Shapes: Practice**

As a landscape architect, you are given a unique property to beautify. The property is composed of a right triangle, a semi-circle, and a rectangle as shown below.



a) Your client has asked to have a fence built around the entire property. What is the perimeter of the yard?

b) Next, you plan to re-sod the entire property surrounding your client's house. If the house has a square footage of 2100 ft^2, what is the area of the yard?

Part b)

Formulas:

① $A = \frac{bh}{2}$

② $A = l \times w$

③ Circle: $A = \pi r^2$; $\pi \doteq 3.14$

Semicircle: $A = \frac{\pi r^2}{2}$

A) Plan:

i- Calculate the area of the entire property.

ii- Subtract the area of the home from the total property area.

B) Solve:

① $A = \frac{bh}{2}$

$= \frac{24.5' \times 32.25'}{2}$

$= 395.06 \text{ ft}^2$

② $A = l \times w$

$= 50.67' \times 32.25'$

$= 1634.11 \text{ ft}^2$

③ $A = \frac{3.14(25.33')^2}{2}$

$= 1007.33 \text{ ft}^2$

Total Area:

① + ② + ③

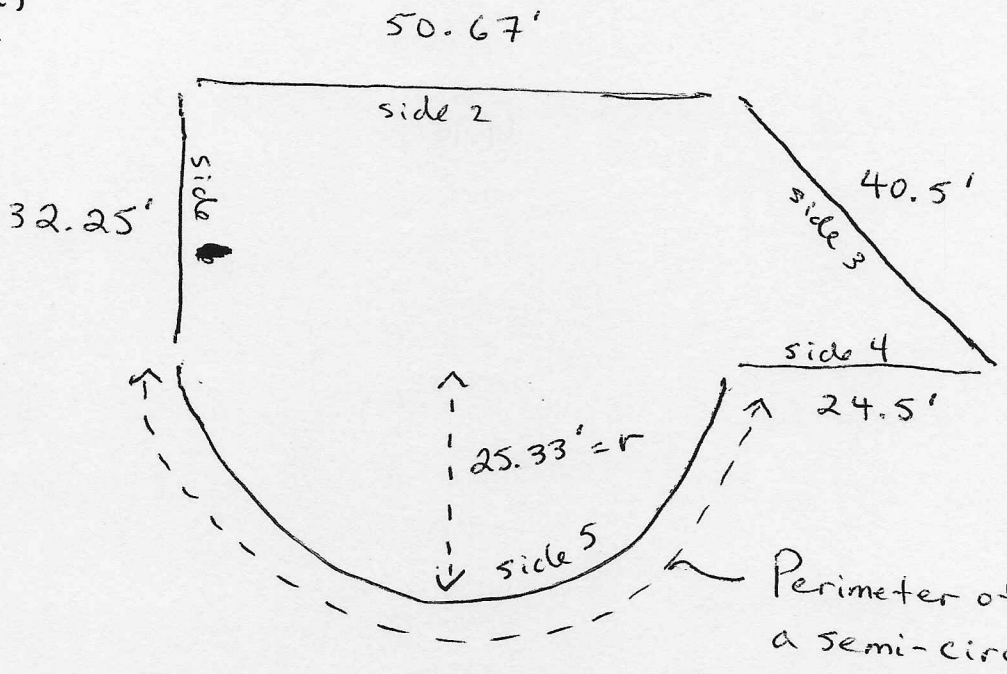
$= 3036.5 \text{ ft}^2$

Area of yard to sod:

$3036.5 - 2100$

$= 936.5 \text{ ft}^2$

Part a)



Formula required:

Circumference of a circle, $C = 2\pi r$

$$C_{\text{semi-circle}} = \frac{2\pi r}{2} \text{ or } \pi r \; ; \; \pi \doteq 3.14$$

$$P = \underset{\text{(side 1)}}{32.25'} + \underset{\text{(side 2)}}{50.67'} + \underset{\text{(side 3)}}{40.5'} + \underset{\text{(side 4)}}{24.5'} + \underset{\text{(side 5)}}{3.14(25.33')}$$

$$\doteq 227.46 \text{ ft}$$

∴ About 227.46 ft will be required to fence in the property.