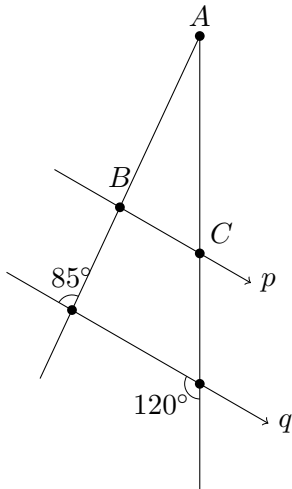


**Problem 1:** Lines  $p$  and  $q$  are parallel. Find the measures of INTERIOR angles in  $\triangle ABC$ :

$\angle A =$  ,  $\angle B =$  , and  $\angle C =$  .



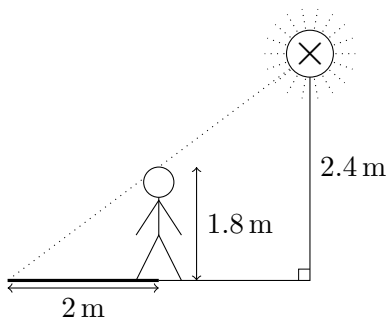
Score: \_\_\_\_/3

**Problem 2:** Set up a table for all rectangles with area  $12 \text{ cm}^2$  whose dimensions are integral in centimetre(s). Of these rectangles, which one has the longest perimeter?

\_\_\_\_\_  
 Rectangle:  
 \_\_\_\_\_  
 Perimeter:  
 \_\_\_\_\_

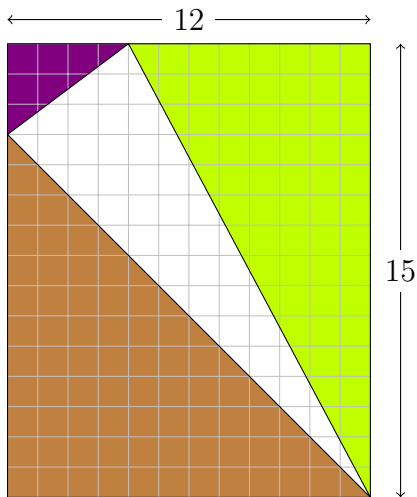
Score: \_\_\_\_/3

**Problem 3:** Shown is a 1.8 m tall pedestrian standing near a lamp post of 2.4 m high. If the pedestrian's shadow is 2 m long, how far away is the pedestrian standing away from the base of the lamp post?



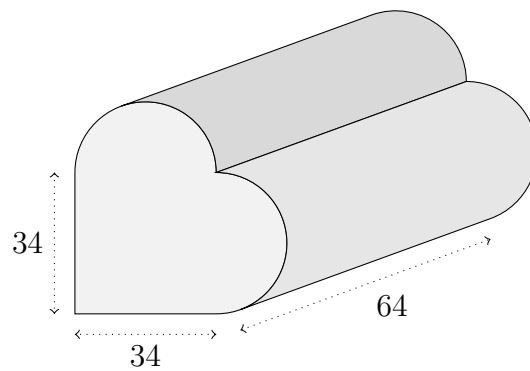
Score: \_\_\_\_/3

**Problem 4:** Below is a  $12 \times 15$  grid containing a narrow triangle lying diagonally. Find the exact (no decimal approximation) perimeter of the narrow triangle. Show steps for each side of the triangle.



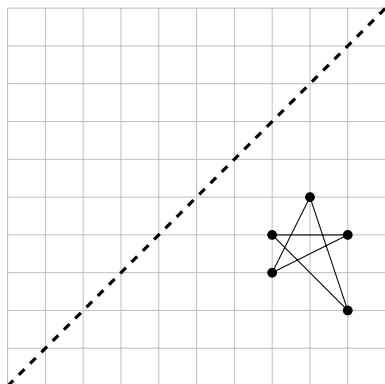
Score: /4

**Problem 5:** Euclid put two half cylinders on a square prism to make a heart prism. Find its volume.



Score: /4

**Problem 6:** Reflect the given figure along the given diagonal.



Score: /2

**Problem 7:** Brian's second brother, Patrick, bought some NFT for \$300 in 2021. After a year, in order to raise money for an emergency, he sold it for \$285. What was the rate of his loss in percent?

Score: /2

**Problem 8:** How much would Brian's grandparents need to put in a GIC earning 1.5% to have a million dollars in 30 years? Use simple interest.

Score: /3

**Problem 9:** Bank of Mom and Pop offered children under 18 years old 3-year GICs worth \$1500 when matured for every \$1200 dollars invested. Suppose the GIC was compounded quarterly, what was the rate Bank of Mom and Pop offered?

Score: /3

**Problem 10:** David's friend, Jason, graduated from university with a student loan of \$30 000 at 4% to be paid off in 5 years.

- a. What would the monthly instalment be using the add-on interest method?
- b. How much was the total finance charge on the loan?
- c. After the first instalment, what was the balance on the loan?

Score: /5

**Problem 11:** If *Capilano Express* credit card charges 22% on unpaid balance, how much would it cost in finance charge to leave \$570 unpaid past the due date for 90 days?

Score: /2