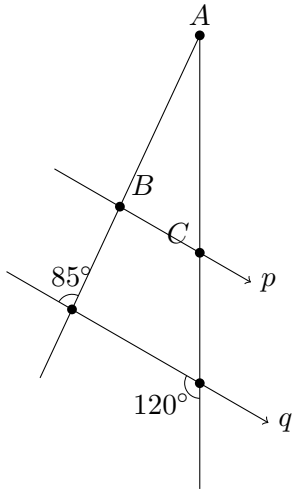


Problem 1: Lines p and q are parallel. Find the measures of INTERIOR angles in $\triangle ABC$:

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



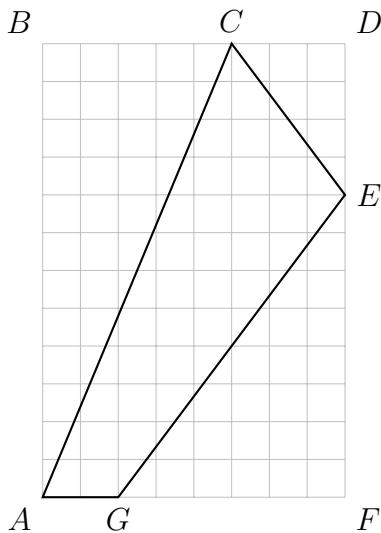
Score: /3

Problem 2: Set up a table to draw all rectangles with perimeter 12 cm whose dimensions are integral in centimetre(s). Of these rectangles, which one has the smallest area?

 Rectangle:
 Area:

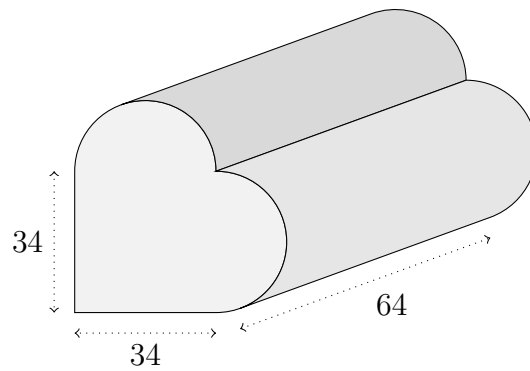
Score: /3

Problem 3: Find the PERIMETER of the quadrilateral $ACEG$ enclosed in the given rectangle $ABDF$.



Score: /4

Problem 4: Euclid put two half cylinders on a square prism to make a heart prism. Find its surface area.



Score: /3

Problem 5: Janette purchased a new pair of winter boots and paid \$112 at the cashier. Using BC's tax rate of 12%, calculate the ticket price on the boots before taxes.

Score: /3

Problem 6: How much would David's grandparents need to put in a GIC earning 3.5% to have a million dollars in 25 years? Use simple interest.

Score: /3

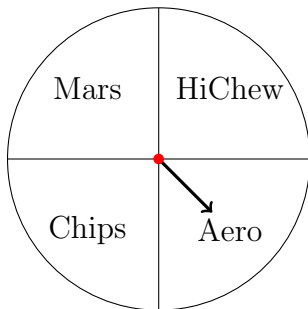
Problem 7: Brian’s friend, Jay, graduated from university with a student loan of \$10 000 at 3% to be paid off in 4 years. Compute the monthly instalment payment.

Score: /3

Problem 8: If *Capilano Express* credit card charges 20.5% on unpaid balance, how much would it cost in finance charge to leave \$370 unpaid past the due date for 60 days?

Score: /2

Problem 9: Dad constructed a spinner with four equal sectors. Draw a sample space for spinning the spinner twice. Find the probability of getting a Mars Bar and a Hichew (in any order) after two spins.



Score: /3

Problem 10: Ham and Sam selected the streaming services monthly for Hamlet and Samlette depending on the shows they wanted their children to watch. The following table shows the result of a survey according to age group and the number of streaming services used on average per month. Given that a participant is selected from the 16–30 age group, what is the probability that the participant is paying for 3 streaming services?

Age	Streaming services			
	1	2	3	4+
16–30	280	435	205	78
31–45	380	129	198	54
46–60	223	552	352	452
61+	121	673	236	22

Score: /3

Problem 11: Samlette liked puzzles. Ham showed her a puzzle of a sample space S as a rectangle containing two events A and B . Samlette knew that $P(S) = 100\%$, $P(A) = 90\%$, and $P(B) = 70\%$, with their overlap, $P(A \cap B) = 65\%$. Help Samlette find the following probabilities through the help of a Venn diagram.

- a. Draw a Venn diagram prescribed by the probabilities given.
- b. Find $P(A \cup B)$.
- c. Find $P(\overline{A \cup B})$.
- d. Find $P(A | B)$.

Score: /4

Problem 12: No test is perfect. The fecal immunochemical test (FIT) is not 100% accurate, i.e. it may miss some colon cancer. Suppose 13% of those taking FIT gets abnormal results, of those, 4% has colon cancer while of those with normal FIT results, 0.2% has cancer. Starting with a FIT branching to Normal and Abnormal results first, then cancer or no cancer second, draw a probability tree for the FIT, then find the probability that given a patient with colon cancer, the patient gets a normal result (negative) for FIT.

Score: /4