

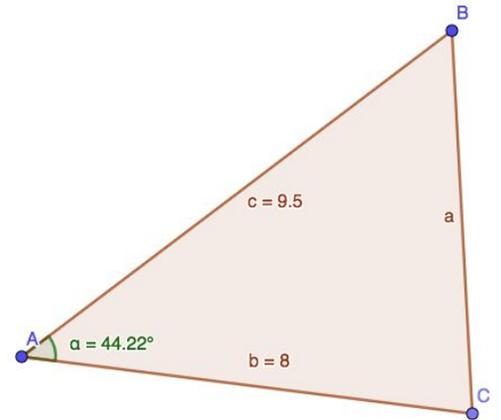
Math SL PROBLEM SET 6

Section A

1. **(T3.6 - R) (CA)** In $\triangle ABC$ as shown, determine:

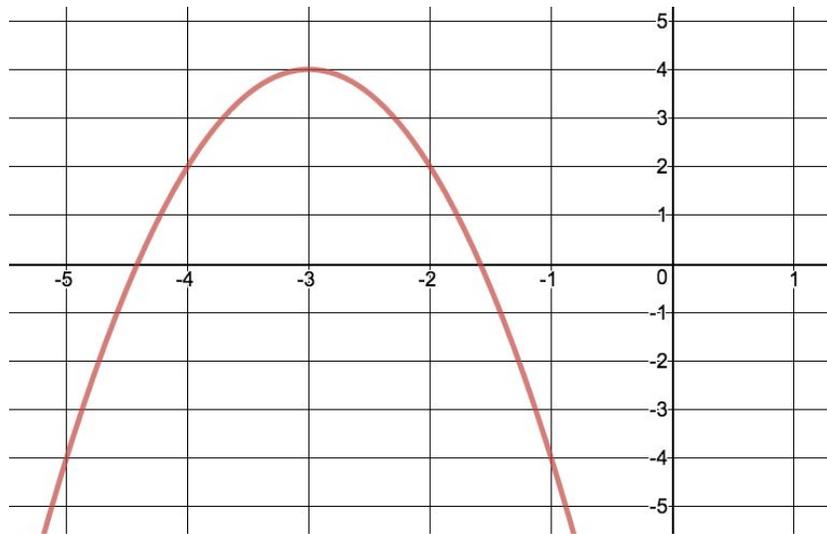
- The measure of side BC.
- The measure of angle $\angle ABC$.

(Cirrito 9.5.4, p300)



2. **(F2.3, 2.4 - R) (CI)** For the quadratic function graphed below, determine: *(Cirrito 2.4.2, p44)*

- The equation and express your final answer in standard form.
- The exact values of the zeroes.
- The transformations that were applied to the parent function, $f(x) = x^2$.



3. **(F2.2, 2.5 - R) (CI)** For the rational function $f(x) = \frac{2x-5}{3-4x}$, determine: *(Cirrito 5.3.5, p144)*

- The equations of the asymptotes of $y = f(x)$.
- The equation of the inverse function, $y = f^{-1}(x)$.

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4. **(SP5.1, 5.2 - R) (CA)** Determine the mean and median of the following data sets: *(Cirrito 13.3, p474)*

(a) Set of Raw Data for Leila's discus throws

22.45m, 23.47m,
19.58m, 21.40m,
22.49m, 21.75m,
27.03m, 26.00m,
24.73m, 24.00 m

(b) Frequency Table for Mostafa's Homework Grades

Score on 5	Frequency
0	6
1	2
2	1
3	7
4	2
5	4

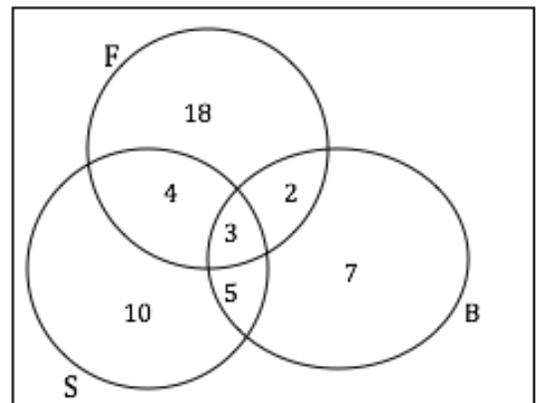
(c) Grouped Data Set for Kholood's 200m sprint times

Time Intervals	Frequency
$28 \leq t < 30$	2
$30 \leq t < 32$	5
$32 \leq t < 34$	4
$34 \leq t < 36$	8
$36 \leq t < 38$	9
$38 \leq t < 40$	2

5. **(SP5.5, 5.6 - R) (CI)** A group of 60 students were asked if they played field hockey (F), basketball (B) or soccer (S). The diagram below displays the results. *(Oxford 3.2, p68)*

How probable is it that a randomly chosen student plays:

- i. field hockey & basketball?
- ii. field hockey or basketball?
- iii. field hockey & soccer?
- iv. neither of the three sports?
- v. only 1 sport?
- vi. Basketball given that they play soccer?
- vii. Soccer given that they play field hockey?

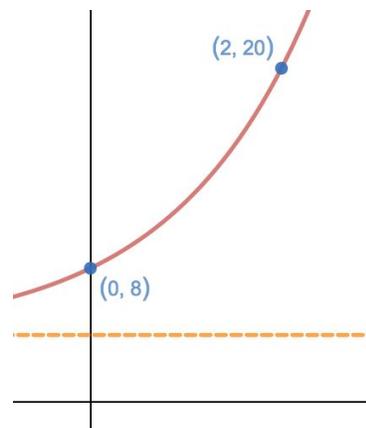


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6. **(F2.6 - R,E) (CA)** The graph of the function $f(x) = A(2^x) + B$ is shown.

(Cirrito 5.3.3, p131)

- Find the value of $f(3)$
- The equation $f(x)$ can be rewritten in the form of $f(x) = 2^{x+k} + B$. Determine the value of k .
- The equation $f(x)$ can be rewritten in the form of $f(x) = A(e^{Rx}) + B$. Determine the value of R .



7. **(A1.1 - E,N) (CI)** What is the pattern in the following number sequences? (if none, write “no pattern”). If possible, predict the 10th term in each sequence. *(Cirrito 8.1.1, p241)*

- 8, 11, 14, 17, ...
- 800, 400, 200, 100, ...
- 1, 6, -14, 2, 11, 18, ...
- 3, 8, 15, 24, 35, 48, ...
- 3, 1, 7, 15, 25, 37, ...
- 2, 4, 8, 16, 32, 64, ...
- 8, 17, 31, 56, 76, 93, ...