

4. The total number of bookmarks owned by Alan and Cecily is 38. If Cecily buys 7 bookmarks from a book store, the number of bookmarks owned by her will be 2 times that owned by Alan. Find the number of bookmarks owned by Alan. (4 marks)
5. The ratio of the number of envelopes owned by Peter to the number of envelopes owned by Gloria is 3 : 4. If Gloria gives 6 of her own envelopes to Peter, both of them will have the same number of envelopes. Find the total number of envelopes owned by Peter and Gloria. (4 marks)
6. There are only two kinds of admission tickets for a theme park: standard tickets and child tickets. The prices of a standard ticket and a child ticket are \$450 and \$270 respectively. On a certain day, the number of standard tickets sold is 2 times the number of child tickets sold and the sum of money for the tickets sold is \$226 980. Find the total number of admission tickets sold that day. (4 marks)

7. Find the range of values of x which satisfy $3x - 7 > 3 - 2x$ or $4x - 3 \geq 9$. (3 marks)

8. (a) Solve the inequality $5x - 8 < 2(x + 5)$.
(b) Find all integers satisfying both the inequalities $5x - 8 < 2(x + 5)$ and $8 - 6x \leq 0$. (4 marks)

9. (a) Find the range of values of x which satisfy both $\frac{2x-7}{2} \geq 3x+4$ and $x-13 > 4x$.
- (b) Write down the greatest integer satisfying both the inequalities in (a).

(4 marks)

10. Consider the compound inequality

$$\frac{2x+1}{5} < \frac{x}{2} \quad \text{or} \quad 2x-5 \leq 5 \quad \dots\dots (*)$$

- (a) Solve (*).
- (b) Write down the greatest negative integer satisfying (*).

(4 marks)

11. (a) Find the range of values of x which satisfy both $\frac{4-x}{3} \leq 2(x+6)$ and $6x < 3(9-x)$.
- (b) How many negative integers satisfy both the inequalities in (a)?

(4 marks)

12. In a polar coordinate system, O is the pole. The polar coordinates of the points A and B are $(5, 110^\circ)$ and $(12, 200^\circ)$ respectively.
- (a) Find $\angle AOB$.
- (b) Find the perimeter of $\triangle OAB$.

(5 marks)

13. In a polar coordinate system, O is the pole. The polar coordinates of the points A , B and C are $(9, 82^\circ)$, $(8, 172^\circ)$ and $(k, 262^\circ)$ respectively, where k is a positive constant.

(a) Are A , O and C collinear? Explain your answer.

(b) If the area of $\triangle ABC$ is 104, find k .

(4 marks)

14. In a polar coordinate system, O is the pole. The polar coordinates of the points P and Q are $(8, 156^\circ)$ and $(8, 216^\circ)$ respectively.

(a) Find $\angle POQ$.

(b) Find the perimeter of $\triangle OPQ$.

(c) Write down the number of folds of rotational symmetry of $\triangle OPQ$.

(4 marks)