Revision Exercise during the extended holiday of Class 3E

Use single-lined paper to complete the following questions.
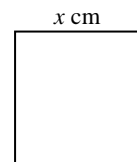
(除 Q.5, 8, 11 外,所有題目均須列式計算,要求與功課簿相同。所有功課請在 2 月 19 日前完成。)

1. Solve each of the following inequalities and represent the solutions on a number line.

   (a) $3x + 5 > 2x + 3$

   (b) $5(x - 1) \geq 8x + 7$

2. In the figure, the perimeter of the square is not less than 84 cm. Let

   x cm be the length of a side of the square. Find the range of values
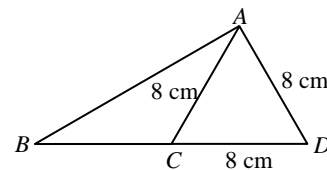
   of x.

3. Simplify each of the following and express the answer with positive indices.
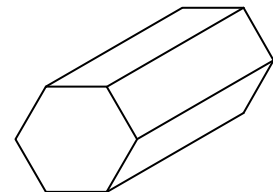
   (a) $(m^{-5})^2$

   (b) $z^6 \times z^4 \div z^7$

4. In the figure, AC is a median of $\triangle ABD$. $AC = CD = AD = 8$ cm.

   Find $\angle ABC$.

5. The figure shows a right regular hexagonal prism. Determine the number

   of axes of rotational symmetry and the order of rotational symmetry about

   each axis.

6. The following table shows Karry's scores (in marks) of three papers and the weight of each paper in the

   examination.

	Paper I	Paper II	Paper III
Score (marks)	79	65	70
Weight	1	3	2

   Find Karry's weighted mean score in the examination.

7. Solve $\dfrac{2x-5}{3} \geq \dfrac{x-4}{2}$ and represent the solutions on a number line.
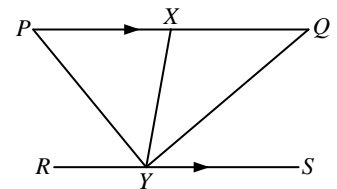
8. **(a)** Convert 169 to a binary number.

  (b) Convert FACE_{16} to a denary number.

9. The cost of building a flat is $1 230 000. Find the total cost of building 2420 flats.

  (*Give the answer in scientific notation correct to 3 significant figures.*)

10. In the figure, *PQ // RS*. *X* and *Y* are points on *PQ* and *RS*

  respectively. *PY* and *QY* are the angle bisectors of $\angle XYR$ and

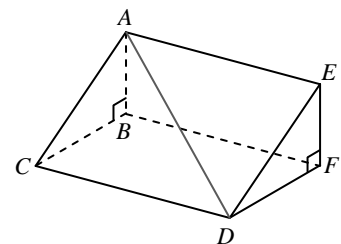 $\angle XYS$ respectively. Prove that *XY* is a median of $\triangle PYQ$.

11. In the figure, *ABCDEF* is a right triangular prism.

  (a) Write down the projection of *AD* on plane *ABFE*.

  (b) Name the angle between *AD* and plane *BCDF*.

  (c) Name the angle between planes *ABD* and *ABFE*.

12. Consider the set of data –8, –5, –5, 0, 2, 4.

  (a) Find the mean and the median of the set of data.

  (b) If '–8' is removed from the original set of data, will the mean increase, decrease or remain unchanged?

  (c) If each datum of the original set of data is decreased by 3, find the mean and the median of the new

  set of data.

13. A sum of $12 000 is deposited at an interest rate of 7% p.a. for 8 months, compounded monthly. Find

  the amount and the interest.

  (*Give the answers correct to the nearest $0.1.*)

14. The value of a stamp increases at a constant rate of 15% per year. If the present value of the stamp is $6348, find its value two years ago.

15. A letter is randomly chosen from each of the two words 'CAT' and 'LATE'. Find the probability that

    (a) Draw a table to represent all the possible outcomes.

    (b) the letters chosen are the same.

    (c) the letters chosen are different.

16. The table below shows the costs involved in producing a batch of books.

	Salary	**Paper**	**Printing**
Cost ($)	$38 000	$20 000	$42 000

If the salary increases by 3%, the cost of paper increases by 8% and the total production cost of the batch of the books remains unchanged, find

    (a) the new printing cost of the batch of books,

    (b) the percentage change in the printing cost of the batch of book, correct to the nearest 0.01%.

17. $\bigcirc\blacklozenge$ is a two-digit number. It is given that $\bigcirc$ is an integer randomly chosen from the digits 1, 2 and 3.

    $\blacklozenge$ is an integer randomly chosen from the digits 0, 2, 4, 6 and 8.

    (a) Draw a table to represent all the possible outcomes.

    (b) Find the probability that the two-digit number is a prime number.