



### 思考站

某電子廠的會計部陳主任記錄了上半年每月的營運情況，他分別以正數及負數表示利潤及虧損。

- (a) 上半年共有多少個月錄得虧損？  
 (b) 根據營運紀錄，計算電子廠上半年的利潤。  
 (c) 電子廠上半年每月的平均利潤有多少？

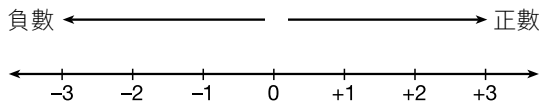
月份	營運紀錄
一月	+\$250 000
二月	+\$320 000
三月	+\$108 000
四月	-\$230 000
五月	-\$470 000
六月	+\$340 000



### 學習錦囊

000 553\$ (c)  
 000 818\$ (b)  
 2 (a)  
 : 美

1. 在水平數線上，正數在 0 的右邊，負數在 0 的左邊。



2. 兩負數相加時，可先將數字相加，然後在答案上加上負號。

例： $(-10) + (-22)$   
 由於  $10 + 22 = 32$   
 所以  $(-10) + (-22) = -32$

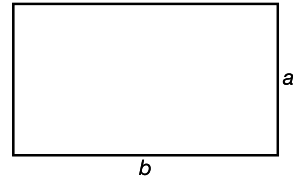
3. 正數加負數時，可先將數字相減，答案的正負號則跟原來較大的數字一樣。

例： $(-12) + (+8)$   
 由於  $12 > 8$ ， $12 - 8 = 4$   
 及 12 為負數，  
 所以  $(-12) + (+8) = -4$

3. 公式為一種數式，它以等號將不同的變數聯繫起來。

例： $P = 2(a + b)$

其中  $P$  代表長方形的周界。



4. 解方程時，應先將同類項移往等號的其中一邊。

例：	$3y - 4 = y + 6$	← (1)	(1) 需將 $y$ 移往等號的左邊
	$3y - 4 - y = y + 6 - y$	← (2)	(2), (3) 移項時：正項兩邊相減 負項兩邊相加
	$2y - 4 = 6$		
	$2y - 4 + 4 = 6 + 4$	← (3)	
	$2y = 10$		
	$\frac{2y}{2} = \frac{10}{2}$	← (4)	(4) 移項時：兩邊同時除以 2
	$y = \underline{\underline{5}}$		

重要原則：必須在方程兩邊同時作相同的運算。

## Warm Up Practice

1. State whether each of the following statements is true (T) or false (F).

- |   |           |
|---|-----------|
| (a) If $x - y = 4$ , then $y = x + 4$ .                 | (a) _____ |
| (b) $n \times m = mn$                                   | (b) _____ |
| (c) $-4(x - 3) = -4x + 12$                              | (c) _____ |
| (d) $6a$ and $-8a$ are unlike terms.                    | (d) _____ |
| (e) The equation $4x = 5x$ does not have any solutions. | (e) _____ |

2. Answer the following with algebraic symbols:

- |   |           |
|---|-----------|
| (a) Lily has $y$ dollars and John has 10 dollars less than Lily.<br>How much does John has? | (a) _____ |
| (b) Mary weighs 40 kg and Peter is $b$ kg heavier than Mary.<br>Write down Peter's weight.  | (b) _____ |



## Test Your Understanding



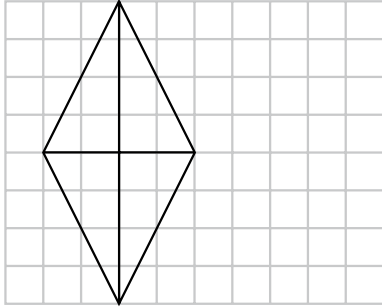
### Fundamental Stage

#### A. Multiple Choice Question

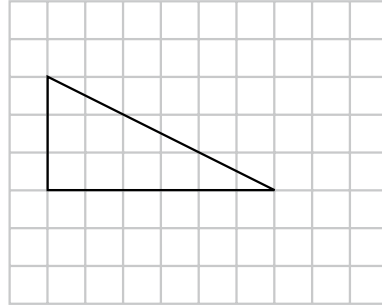
1.  $2a + 4a + 5a =$   
A.  $9a$   
B.  $11a$   
C.  $11a^3$   
D.  $40a^3$
2. Simplify  $a^6 \div a^6$ .  
A. 0  
B. 1  
C.  $a^2$   
D.  $a$
3.  $(12a) \div (2b) \times (3c) =$   
A.  $\frac{18a}{bc}$   
B.  $\frac{2ac}{b}$   
C.  $\frac{12ac}{b}$   
D.  $\frac{18ac}{b}$
4.  $(3a)^2 \div 3a^2 =$   
A. 1  
B. 3  
C.  $3a^2$   
D.  $3a$
5. How many terms are there in the polynomial  $2x + 3y - 4xy$ ?  
A. 1  
B. 2  
C. 3  
D. 4
6. What is the degree of the polynomial  $2x^4 - 3x + 5$ ?  
A. 1  
B. 2  
C. 3  
D. 4
7. Which of the following polynomials has constant term equal to 0?  
A.  $(x + 2)(x + 3)$   
B.  $x(x + 3)$   
C.  $(x - 1)(x + 5)$   
D.  $x^2 + 0x + 6$
8. Consider the polynomial  $2x^3 + 4x - 5$ . Which of the following is not correct?  
A. The degree is 3.  
B. The constant term is 5.  
C. The polynomial has 3 terms.  
D. The coefficient of  $x$  is 4.
9. Expand  $(2x - 3y)^2$ .  
A.  $4x^2 - 12xy + 9y^2$   
B.  $4x^2 - 12xy - 9y^2$   
C.  $4x^2 - 9y^2$   
D.  $4x^2 + 9y^2$

25. Draw the images of the following figures after the following transformations.

(a) Reduction by  $\frac{1}{2}$



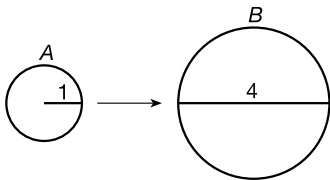
(b) Reduction by one-third



**Advanced Stage**

**A. Multiple Choice Question**

1. If figure A is enlarged to figure B, the scalar factor is



- A. 4.
- B. 2.
- C.  $\frac{1}{3}$ .
- D.  $\frac{1}{4}$ .

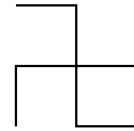


2. Which of the following figures must have both reflectional symmetry and rotational symmetry?

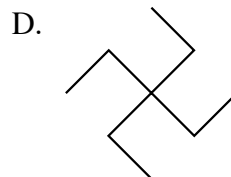
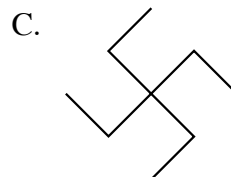
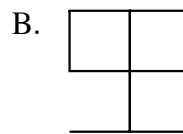
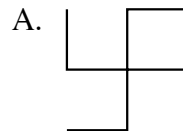
- A. Triangle
- B. Trapezium
- C. Parallelogram
- D. Rectangle



3.



Which of the following figures can be the image of the above figure after a rotation?

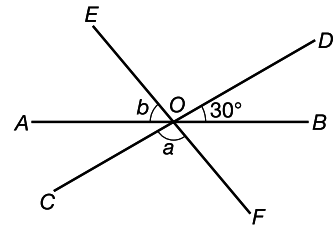
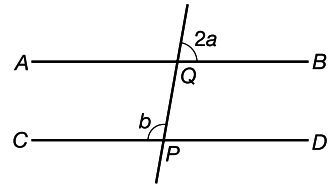




## Open-ended Question



1. Suggest 2 different pairs of values of  $a$  and  $b$  such that  $AB \parallel CD$ .
2. In the figure,  $AOB$ ,  $COD$  and  $EOF$  are straight lines. Write down one more condition in order to find the values of  $a$  and  $b$ .

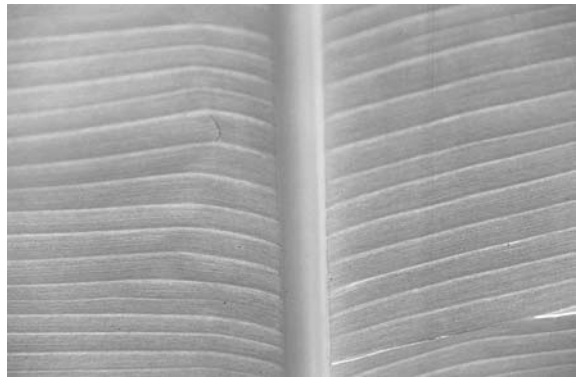


## 休憩室



### 平行的事物

日常生活中，有哪些事物是平行的呢？圖中的葉脈便是其中一例。你能否舉出其他例子？



## Important Term



adjacent angle (鄰角)

alternate angles (內錯角)

angles at a point (同頂角)

corresponding angles (同位角)

interior angles (同旁內角)

vertically opposite angles (對頂角)

## Assessment 2 (Revision for Chapters 8 – 13)


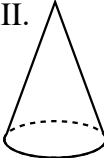
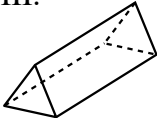
**Time allowed: 1 hour and 30 minutes**

**Full marks: 100**

**Answer ALL questions**

Section A: Multiple Choice Question (30 marks)

Each question carries 2 marks.

1. Which of the following angles can form a triangle?  
A.  $50^\circ, 50^\circ, 90^\circ$   
B.  $40^\circ, 40^\circ, 110^\circ$   
C.  $60^\circ, 50^\circ, 60^\circ$   
D.  $50^\circ, 80^\circ, 50^\circ$
2. Which of the following triangles cannot have an obtuse angle?  
I. Isosceles triangle  
II. Right-angled triangle  
III. Equilateral triangle  
A. I only  
B. II only  
C. I and III only  
D. II and III only
3. Which of the following pairs of angles can form a straight line?  
I.  $60^\circ, 30^\circ$   
II.  $100^\circ, 80^\circ$   
III.  $156^\circ, 34^\circ$   
A. I only  
B. II only  
C. I and III only  
D. II and III only
4. Find the area of a square with perimeter 52 cm.  
A.  $13 \text{ cm}^2$   
B.  $52 \text{ cm}^2$   
C.  $144 \text{ cm}^2$   
D.  $169 \text{ cm}^2$
5.  $0.045 \text{ m}^3 =$   
A. 4.5 L  
B. 45 L  
C. 450 L  
D. 4500 L
6. Which of the following solids do/ does not have an uniform cross-section area?  
I.  II.  III.   
A. I only  
B. II only  
C. I and III only  
D. II and III only

# 成績指標

1. 同學完成每課練習後，請計算自己所得的分數。
2. 得分計算方法：每題練習答對可得 1 分，答錯得 0 分。  
如該題分為數個部分，則每部分答對可得 1 分。  
例 1：第 1 章的基礎題，所包含的短題目中的第 13 題有 (a) — (d) 4 部分，故第 13 題的總分為 4 分。  
例 2：第 1 章的基礎題，所包含的短題目中的第 11 題並沒有分為數部分，故第 11 題的總分為 1 分。
3. 同學們可參考下列積分表，評估個人的成績。

章節	日期		你的表現如何？請加上「✓」號。		
	開始	完成	表現良好	繼續努力	有待改善
Chapter 1					
Chapter 2					
Chapter 3					
Chapter 4					
Chapter 5					
Chapter 6					
Chapter 7					
Chapter 8					
Chapter 9					
Chapter 10					
Chapter 11					
Chapter 12					
Chapter 13					



### Warm Up Practice

- (a) F                      (b) T  
(c) F                      (d) T  
(e) F                      (f) F
- (a)  $x$                       (b)  $2x^4 - 3x^2 + 4x + 5$   
(c) 4                      (d)  $-3$   
(e) 5
- $4a^3 \times 3a^5 = (4 \times 3) \times (a^3 \times a^5)$   
 $= \underline{\underline{12a^8}}$
- $(a^2b^3)^2 + a^3b^2 = a^{4-3}b^{6-2}$   
 $= \underline{\underline{ab^4}}$
- $= 4x^3 - 2x^3 - 3x^2 + 4x^2 + 4x + 5x - 6 - 7$   
 $= \underline{\underline{2x^3 + x^2 + 9x - 13}}$
- $7a$
- $6a^2 + ab - 12b^2$
- $= 2x^3 - 3x^2 + 6x^2 + 4x - 9x + 12$   
 $= \underline{\underline{2x^3 + 3x^2 - 5x + 12}}$

- $(3a)^2 \div 3a \times 3c$   
 $= 9a^2 \div 3a^2$   
 $= \underline{\underline{3}}$
- $(x-2)(x+3) = x^2 + x + 6$   
 $x(x+3) = x^2 + 3x$   
 $(x-1)(x+5) = x^2 + 4x - 5$   
 $x^2 + 0x + 6 = x^2 + 6$

- $(2x-3y)^2 = (2x-3y)(2x-3y)$   
 $= 4x^2 - 6xy - 6xy + 9y^2$   
 $= \underline{\underline{4x^2 - 12xy + 9y^2}}$

### B. Short Question

- (a)  $3 \times 5^2 + 6^3$                       •  $3 \times 5^2 \neq (3 \times 5)^2$   
 $= 3 \times 25 + 216$   
 $= \underline{\underline{291}}$
- $3 \times 4^3 - 4 \times 3^3 = 3 \times 64 - 4 \times 27$   
 $= \underline{\underline{84}}$
- $(-4)^3 \div (-2)^4 \times 3^2 = (-64) \div 16 \times 9$   
 $= \underline{\underline{-36}}$
- $(-2)^{10} \div (-2)^8 = (-2)^{10-8}$   
 $= (-2)^2$   
 $= \underline{\underline{4}}$

- (a)  $a \times a \times a \times b \times b = \underline{\underline{a^3b^2}}$   
(b)  $2a \times a \times 4a \times a = \underline{\underline{8a^4}}$   
(c)  $(-c) \times (-c) \times (-c) \times (-c) = \underline{\underline{c^4}}$

- (a)  $\frac{1}{3}ab \times 12a = \left(\frac{1}{3} \times 12\right) \times a \times a \times b$   
 $= \underline{\underline{4a^2b}}$   
(b)  $18ab \div 3b \times a$   
 $= \frac{18ab}{3b} \times a$   
 $= 6a \times a$   
 $= \underline{\underline{6a^2}}$



### Test Your Understanding

#### Fundamental Stage

#### A. Multiple Choice Question

- B      2. B      3. D      4. B      5. C  
6. D      7. B      8. B      9. A

Solution:

$$3. \quad 12a \div 2b \times 3c$$

$$= \frac{12a}{2b} \times 3c$$

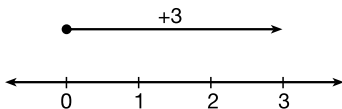
$$= \frac{18ac}{b}$$



2. 用數線表示正負數加減時需注意的事項：

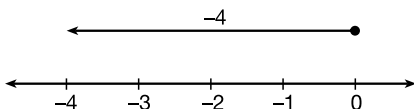
(a) 正數表示向右行。

【例】  $+3$



(b) 負數表示向左行。

【例】  $-4$

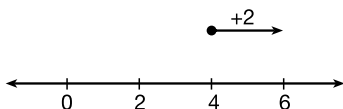


3. 相同符號得正，向右行。

$(+)(+) = +$  或  $(-)(-) = +$

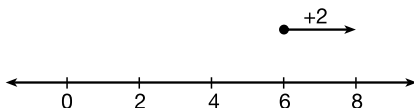
【例】 加一個正數  $+(+)$

$$4 + (+2) = +6$$



減一個負數  $-(-)$

$$6 - (-2) = +8$$



4. 不同符號得負，向左行。

【例】 加一個負數  $+(-)$

$$4 + (-6) = -2$$

