# S1 Mathematics Test (Ch 2)

DGS Quiz 2 Directed numbers and number lines

Time allowed: 35 min  Total marks: 30

## Multiple Choice Questions (10 marks)

1. It is given that $P < Q < 0 < R$. Which of the following gives the smallest value?

   A. $P + Q + R$  B. $P - Q + R$  C. $P + Q - R$  D. $P - Q - R$

2. A car travels 70 km due east, 40 km due west and then 30 km due east. How should the car return to the starting position?

   A. Travel 60 km due east.  B. Travel 60 km due west.

   C. Travel 80 km due east.  D. Travel 140 km due west.

3. It is given that $P$ and $R$ are negative numbers and $Q$ is a positive number. Which of the following expressions can give a positive value?

   I. $P + Q - R$  II. $P - Q \times R$  III. $P + Q \div R$

   A. I only  B. II and III only  C. All of the above  D. None of the above

4. It is given that $a < 0$ and $-1 < b < 0$. Arrange $a, ab, ab^2$ in descending order.

   A. $ab^2 > ab > a$  B. $ab > a > ab^2$  C. $a > ab > ab^2$  D. $ab > ab^2 > a$

5. $\left(1+\frac{1}{2}\right)\left(-1-\frac{1}{3}\right)\left(1+\frac{1}{4}\right)\left(-1-\frac{1}{5}\right)\left(1+\frac{1}{6}\right)\left(-1-\frac{1}{7}\right)\ldots\left(1+\frac{1}{40}\right) =$

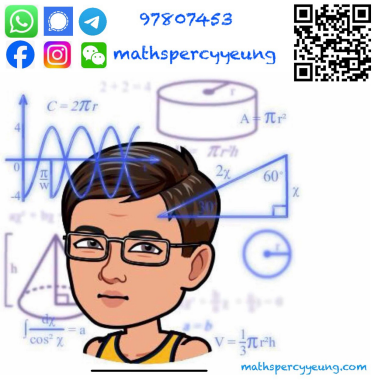
   A. $-\frac{41}{2}$  B. $-20$  C. $20$  D. $\frac{41}{2}$

## Conventional Questions (20 marks)

1. Calculate each of the following.

   (a) $[-25-(-16)]\times[(-2)^3-(-3)^2-5^2]$

   (b) $(-27)\div 2\frac{1}{4}\times\frac{5}{18}-(-9)\div(-\frac{3}{10})$




(6 marks)

**To be continued**

2. The table below shows the time zone differences of two countries from Hong Kong, while +1 means 1 hour ahead of the local time of Hong Kong.

| **Country** | Brazil | India |
|---|---|---|
| **Time zone difference (hour)** | −11 | −2.5 |

(a) By how many hours is the local time in India ahead of/behind the local time in Brazil?

(b) An aeroplane flies from Brazil to India. The plane takes off at 7 a.m. in Brazil. If the journey takes 8 hours, can the aeroplane arrives India on the same day? Explain your answer.

(4 marks)

3. Last year, a shop lost $63 000 for the first 4 months and gained $44 000 for the next 4 months. The shop had no gain and no loss in the first half of last year. The shop gained $139 000 for the last 4 months last year. What was the monthly gain or loss on average of the shop in the second half of last year? (5 marks)

4. In a computer game, a player collects fruits and the points awarded for each type of fruits collected are as follows:

| | Apple | Mango | Orange |
|---|---|---|---|
| Points | +4 | −9 | +3 |

(a) George collects some oranges, 36 apples and 15 mangoes only. If he obtains 81 points in the game, how many oranges does he collect?

(b) Mary collects 10 fruits and obtains $n$ points. If $n$ is a negative number, find the largest possible value of $n$.

(5 marks)

**END OF PAPER**