GHS Sorted Past Paper - MC
S1-02 Directed Numbers and the Number Line

1. [20 - 21 S1 Final Exam - 10] (84%)

10. If G is a positive number and H is a negative number, which of the following must be positive?

A. $G \times H$

B. $G \div H$

C. $G^2 + H$

D. $G + H^2$

2. [20 - 21 S1 Mid-year Exam - 08] (68%)

8. Arrange the following numbers in ascending order.

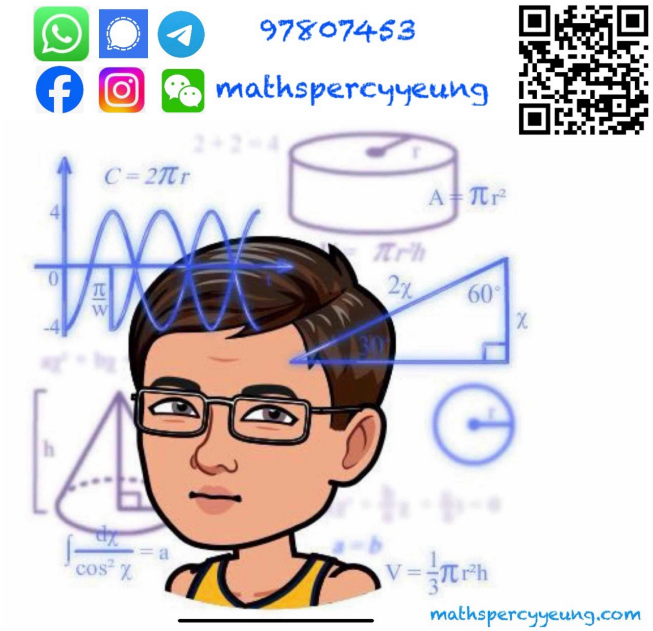
$$-\frac{1}{3}, -\frac{1}{6}, +\frac{1}{8}, +\frac{1}{4}, -\frac{1}{2}$$

A. $-\frac{1}{2}, -\frac{1}{3}, -\frac{1}{6}, +\frac{1}{8}, +\frac{1}{4}$

B. $-\frac{1}{6}, -\frac{1}{3}, -\frac{1}{2}, +\frac{1}{8}, +\frac{1}{4}$

C. $+\frac{1}{4}, +\frac{1}{8}, -\frac{1}{2}, -\frac{1}{3}, -\frac{1}{6}$

D. $+\frac{1}{4}, +\frac{1}{8}, -\frac{1}{6}, -\frac{1}{3}, -\frac{1}{2}$



3. [20 - 21 S1 Mid-year Exam - 13] (57%)

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

A. $P + Q - R$

B. $P - Q \times R$

C. $P + Q \div R$

D. $P \times Q \div R$

4. [20 - 21 S1 Mid-year Exam - 14] (54%)

14. Which of the following statements must be correct?

A. The greatest negative number is −1.

B. The sum of two negative numbers is negative.

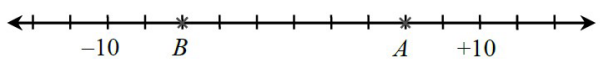
C. The product of two negative numbers is negative.

D. The opposite number of a number is always smaller than itself.

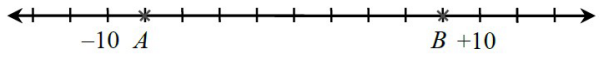
5. [21 - 22 S1 Final Exam - 02] (93%)

2. If $A = -5 + 3$ and $B = (+2)(-4)$ Which of the following are correct positions of A and B on the number line?

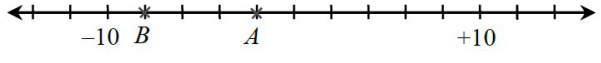
A.



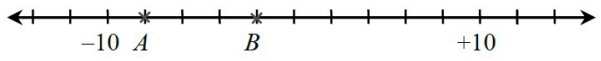
B.



C.



D.



6. [21 - 22 S1 Final Exam - 10] (64%)

10. If $A < 0$, $B > 0$ and $C < 0$, which of the following values is negative?

A. $AC + B$

B. $-BC - A$

C. $AB + B(-A)$

D. A^2BC

7. [21 - 22 S1 Mid-year Exam - 03] (84%)

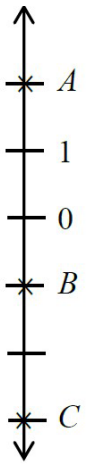
3. Arrange $-\frac{1}{3}$, -0.5 and 0 in ascending order.

A. $-0.5 < -\frac{1}{3} < 0$
B. $-\frac{1}{3} < -0.5 < 0$
C. $0 < -0.5 < -\frac{1}{3}$
D. $0 < -\frac{1}{3} < -0.5$

8. [21 - 22 S1 Mid-year Exam - 04] (77%)

4. Refer to the number line on the right, find the value of $A + B - C$.

A. –2
B. 0
C. 2
D. 4



9. [21 - 22 S1 Mid-year Exam - 05] (94%)

5. Which of the following gives a negative result?

A. $-27 \div (-3) \times (+2)$
B. $-27 \div (+3) \times (-2)$
C. $-27 \div (-3) \times (-2)$
D. $27 \div (-3) \times (-2)$

10. [21 - 22 S1 Mid-year Exam - 11] (73%)

11. $40 - [14.1 + 1.88 \div (1 - 0.3 \times 0.2)] =$

A. 21 .
B. 21.2 .
C. 23 .
D. 23.9 .

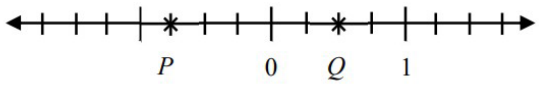
11. [21 - 22 S1 Mid-year Exam - 12] (91%)

12. $-4 \times [-6 + (-20) \div 2] =$

A. –34 .
B. –16 .
C. 52 .
D. 64 .

12. [22 - 23 S1 Final Exam - 02] (96%)

2. In the figure, two directed numbers P and Q are marked on the number line. Find the values of P and Q.



	P	Q
A.	−1.5	0.5
B.	−1.5	1
C.	−0.75	0.5
D.	−0.75	1

13. [22 - 23 S1 Mid-year Exam - 02] (93%)

2. Arrange the following numbers in ascending order.

$-\frac{1}{3}$, -4 , 0 , $+\frac{3}{2}$, -1 , $-\frac{1}{6}$

A. $-4, -1, -\frac{1}{3}, -\frac{1}{6}, 0, +\frac{3}{2}$

B. $-4, +\frac{3}{2}, -1, -\frac{1}{3}, -\frac{1}{6}, 0$

C. $0, -\frac{1}{6}, -\frac{1}{3}, -1, +\frac{3}{2}, -4$

D. $+\frac{3}{2}, 0, -\frac{1}{6}, -\frac{1}{3}, -1, -4$

14. [22 - 23 S1 Mid-year Exam - 03] (86%)

3. Which of the following numbers are equal to -0.25?

I. $-\frac{1}{4}$

II. $\frac{1}{-4}$

III. $\frac{-1}{-4}$

A. I and II only
B. I and III only
C. II and III only
D. I, II and III

15. [22 - 23 S1 Mid-year Exam - 16] (71%)

16. Which of the following gives a negative result?

A. $\frac{(-4)(-6)}{(-2)^2}$

B. $\frac{(-3)\times(-4)^3}{(-1)(-5)}$

C. $\frac{(-13)\times(-7)^2}{-5}$

D. $\frac{(-2)^2\times(-3)}{(-6)(-1)}$

16. [22 - 23 S1 Mid-year Exam - 17] (86%)

17. $1\frac{1}{2}\div\frac{5}{4}\times\left[\left(\frac{4}{3}-\frac{1}{6}\right)\times 2+1\right]=$

A. -2.
B. 0.
C. 2.
D. 4.

17. [23 - 24 S1 Final Exam - 05] (85%)

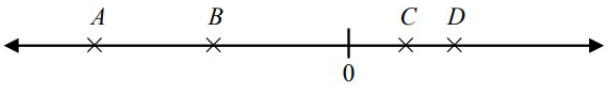
5. If a, b, c, d, e and f are all positive numbers, determine the sign of the following expression.

$$-\left(\frac{a}{b}\right)(c)\div\left(\frac{-1}{d}\right)(e)(-f)$$

A. Positive
B. Negative
C. Neither positive nor negative
D. Cannot be determined

18. [23 - 24 S1 Final Exam - 14] (59%)

14. Refer to the number line below, each letter represents a directed number.



Which of the following must be true?

A. $A-B>D-C$
B. $C-B>D-A$
C. $A\cdot B<C\cdot D$
D. $B\cdot C>A\cdot D$

19. [23 - 24 S1 Mid-year Exam - 03] (61%)

3. Arrange -1.5, -1, 0, $-\frac{5}{3}$ and $\frac{1}{2}$ in descending order.

A. $-\frac{5}{3}<-1.5<-1<0<\frac{1}{2}$
B. $-1.5<-\frac{5}{3}<-1<0<\frac{1}{2}$
C. $\frac{1}{2}>0>-1>-\frac{5}{3}>-1.5$
D. $\frac{1}{2}>0>-1>-1.5>-\frac{5}{3}$

20. [23 - 24 S1 Mid-year Exam - 12] (49%)

12. Which of the following gives the largest result?

A. $(-3)\times(-5)\times(-7)$

B. $\dfrac{(+3)\times(-5)^2}{-7}$

C. $\dfrac{-3}{(+5)^2\times(+7)}$

D. $\dfrac{1}{(-3)\times(-5)^2\times(-7)^3}$

21. [23 - 24 S1 Mid-year Exam - 18] (49%)

18. Which of the following must be true?

I. When a directed number is divided by its opposite number, the quotient is 1.
II. When a directed number is added by 2, the sum is larger than the original number.
III. When a directed number is multiplied by 2, the product is larger than the original number.

A. I only
B. II only
C. I and III only
D. II and III only

22. [24 - 25 S1 Final Exam - 02] (93%)

2. The temperature in a city had risen by $8°C$ to $3°C$. The original temperature of the city was

A. $-11\,°C$.

B. $-5\,°C$.

C. $5\,°C$.

D. $11\,°C$.

23. [24 - 25 S1 Final Exam - 13] (49%)

13. If a and b are negative numbers with $a > b$, which of the following must be a positive number?

I. $a(b-a)$

II. $b(a-b)$

III. $\frac{a^2}{b}$

A. I only.

B. II only.

C. I and III only.

D. II and III only.

24. [24 - 25 S1 Mid-year Exam - 02] (64%)

2. How many prime factors does 36 have?

A. 1

B. 2

C. 3

D. 9

25. [24 - 25 S1 Mid-year Exam - 04] (88%)

4. Which of the following is correct?

A. $+\frac{7}{12} > +\frac{1}{6} > -\frac{1}{12} > -\frac{7}{6}$

B. $+\frac{7}{12} > +\frac{1}{6} > -\frac{7}{6} > -\frac{1}{12}$

C. $+\frac{1}{6} > +\frac{7}{12} > -\frac{1}{12} > -\frac{7}{6}$

D. $+\frac{1}{6} > +\frac{7}{12} > -\frac{7}{6} > -\frac{1}{12}$

26. [24 - 25 S1 Mid-year Exam - 20] (60%)

20. Which of the following must be true?

I. The product of a directed number and its opposite number is negative.
II. The result of subtracting a directed number from its opposite number is positive.
III. A directed number and its opposite number have the same magnitude.

A. I and II only

B. I and III only

C. II and III only

D. I, II and III

GHS Sorted Past Paper - Conventional Questions
S1-02 Directed Numbers and the Number Line

1. [20 - 21 S1 Final Exam - 12]

12. At the end of each day, Trinity will record the change in her pocket money as compared with the previous day. A positive number represents an increase in pocket money.

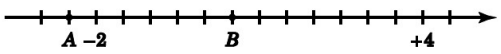
Time	Day 1	Day 2	Day 3	Day 4
Change in pocket money	+ \$12	– \$8	– \$20	+ \$11

(a) Find the total change in her pocket money from Day 1 to Day 4. **(2 marks)**

(b) Trinity has \$50 at end of Day 4, find the amount of her pocket money at the beginning of Day 1. **(2 marks)**

2. [20 - 21 S1 Mid-year Exam - 01] (79%)

1. Consider the following number line. **(2 marks)**



Write down the directed numbers represented by A and B.

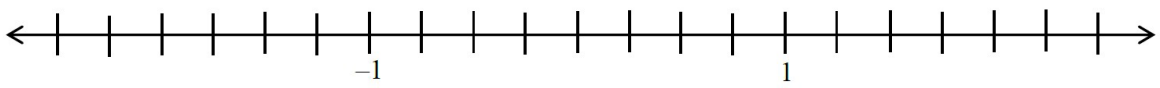
A: _____ B: _____

3. [20 - 21 S1 Mid-year Exam - 08] (83%)

8. Evaluate $\left(\frac{3}{5}-\frac{2}{3}\right)\times\frac{6}{7}\div\left(-\frac{1}{5}\right)$. **(3 marks)**

4. [21 - 22 S1 Mid-year Exam - 01] (81%)

1. Mark the numbers $-\frac{1}{2}$, 0, and -2 on the number line below. **(2 marks)**



5. [21 - 22 S1 Mid-year Exam - 03] (82%)

3. Evaluate $1+\frac{17}{12}\div\left(5\frac{2}{3}-2\frac{5}{6}\right)$. **(2 marks)**

6. [21 - 22 S1 Mid-year Exam - 04] (87%)

4. Evaluate each of the following.

(a) $-24-(+2)\times(-3)$ **(2 marks)**

(b) $20\div[-12+(-8)]-(-1)$ **(2 marks)**

(c) $\frac{8}{3}\times\left[-15-(-144)\div 12\right]$ **(2 marks)**

7. [21 - 22 S1 Mid-year Exam - 10] (89%)

10. In a game, Alice gets one card of -10 marks, two cards of -5 marks and three cards of $+10$ marks. What is the total score of Alice's cards? **(2 marks)**

8. [22 - 23 S1 Final Exam - 02] (89%)

2. Assume that $+2^{\circ}C$ represents $2^{\circ}C$ above the room temperature. Use a directed number to represent each of the following.

(a) $3^{\circ}C$ below the room temperature. **(1 mark)**

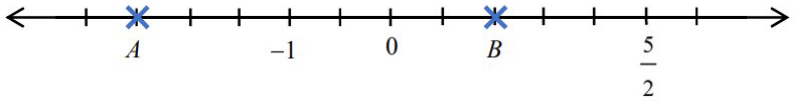
(b) $6^{\circ}C$ above the room temperature. **(1 mark)**

9. [22 - 23 S1 Final Exam - 05] (77%)

5. In a quiz of 10 questions, 3 marks will be awarded for each correct answer and 2 marks will be deducted for each wrong answer. If a student answered all questions and got 4 correct answers, find the score of the student. **(2 marks)**

10. [22 - 23 S1 Mid-year Exam - 02] (96%)

2. Consider the following number line:



Write down the directed numbers represented by A and B. **(2 marks)**

11. [22 - 23 S1 Mid-year Exam - 08] (76%)

8. Evaluate each of the following expressions.

(a) $-3-(-5)$ **(2 marks)**

(b) $4\times(-2)-(+1)$ **(2 marks)**

(c) $-\frac{2}{7}-\frac{1}{6}\times\left[-3+2\div\left(-\frac{2}{3}\right)\right]$ **(3 marks)**

12. [23 - 24 S1 Final Exam - 07] (82%)

7. Bryan and Levi are playing a dart throwing game. Each of them will throw 10 darts, Bryan will throw all 10 darts first then he passes the chance to Levi. The dartboard is shown as below.

The score obtained by each dart follows the following scoring rules:

Region	Score
Black	+1
Grey	+6
White	+4
Out of the dartboard	–8

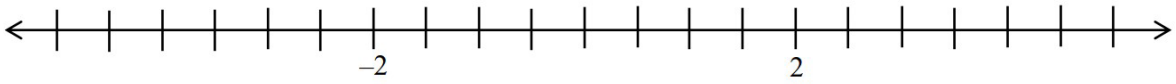
The one who obtains the highest score will win the game.

(a) Among 10 darts thrown by Bryan, 1 hits the black region, 3 hit the grey region, 1 hits out of the dartboard and the remaining hit the white region. Find the total score obtained by Bryan. **(2 marks)**

(b) It is given that Levi obtained 21 scores after throwing 8 darts, is it possible that Levi gets a higher score than Bryan? Explain your answer. **(2 marks)**

13. [23 - 24 S1 Mid-year Exam - 04] (96%)

4. Mark and label the numbers 0, –4.5 and 3 on the number line below. **(2 marks)**



14. [23 - 24 S1 Mid-year Exam - 11] (56%)

11. Evaluate each of the following.

(a) $(-1)-(-2)-(+3)$ **(2 marks)**

(b) $-1\frac{1}{14}\div 3\frac{4}{7}-\frac{2}{7}\times(-3)$ **(2 marks)**

(c) $-5^2\div\left[(1.2-0.2\times 4)\times(-5)\right]$ **(3 marks)**

15. [24 - 25 S1 Final Exam - 08] (83%)

8. There are 25 multiple choice questions in a Mathematics test. It is given that 5 marks will be awarded for each correct answer, 3 marks and 1 mark will be deducted for each wrong answer and blank answer respectively. Keith answered 17 questions in the test and got 12 questions correct. What is the total score obtained by Keith? **(3 marks)**

16. [24 - 25 S1 Mid-year Exam - 02] (91%)

2. Arrange $\frac{5}{8}$, $\frac{7}{10}$ and $\frac{11}{16}$ in ascending order using the symbol " < ".

_____< _____< _____ **(1 mark)**

17. [24 - 25 S1 Mid-year Exam - 08] (98%)

8. In a game, players can get different scores based on the cards collected. The scores of each type of cards is as follows:

Type	Scores
A	+3
B	–1
C	–5

If Alice collects 5 type A cards, 3 type B cards and 2 type C cards. Find the total scores that Alice gets. **(2 marks)**

18. [24 - 25 S1 Mid-year Exam - 12] (80%)

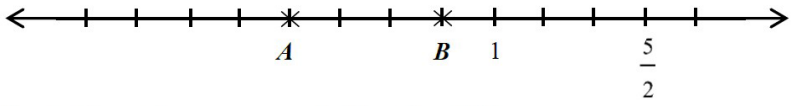
12. Find the values of the following expressions.

(a) $\left(\frac{1}{4}-\frac{3}{5}\right)\times(-8)$ **(2 marks)**

(b) $\left[(+5)(-3)^2+\left(-0.5-3^2\right)\right]\div(-2\div 4)$ **(3 marks)**

19. [24 - 25 S1 Mid-year Exam - 05] (82%)

5. Consider the following number line.



(a) Write down the directed numbers represented by A and B.

A =_____ B =_____ **(2 marks)**

(b) Find the value of $3A+2B$. **(2 marks)**