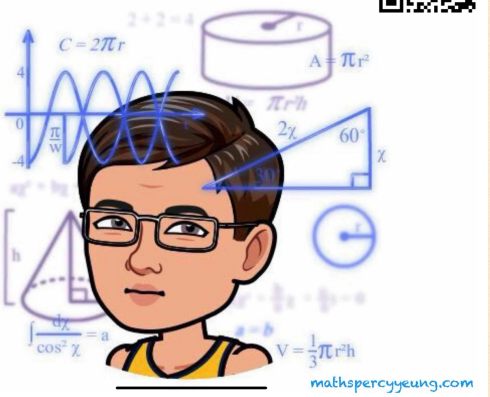


S1

Mathematics

Past Exam Paper (1314–2223)

Question Book

Ch2 Directed Numbers

UCCKE F1 Ch2 Directed Number

Ch2 Directed Numbers

[1314 S.1 1st Exam MC Q1]

1. Which of the following statements are true?

I. $-2^2 = (-2)^2$

II. $(-1)^{99} = (-1)^9$

III. $\frac{-1}{2} = \frac{1}{-2}$

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

[1314 S.1 1st Exam MC Q2]

2. The number line in figure 1 is not drawn correctly. What is/are the mistake(s) of it?

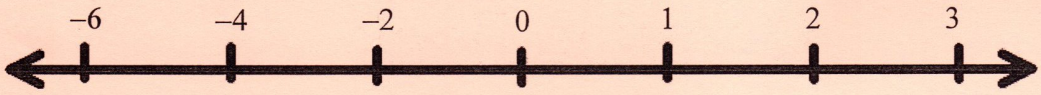


Figure 1

I. There should not be arrows on the two ends of the line.
II. The negative numbers should be located on the right of zero.
III. The distance between any two consecutive integers should be equal.

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

[1314 S.1 1st Exam SQ Q1]

3. Find the values of the following expressions.

(a) $(-23)+(-9)-(-6)$

(b) $(-26)-(+77)\div[(+25)\div(-5)\times(+8)-(-29)]$

(5 marks)

[1415 S.1 1st Exam MC Q1]

4. Which of the following is/are negative?

I. $(-2)^2$

II. -2^2

III. $(-2)^3$

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

[1415 S.1 1st Exam MC Q2]

5. Given that $x < 0 < y$, which of the following must be true?

I. $xy < 0$

II. $x + y < 0$

III. $x - y < 0$

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

[1415 S.1 1st Exam SQ Q1]

6. Evaluate $(-7) - (-5)$.

(2 marks)

[1415 S.1 1st Exam SQ Q2]

7. Evaluate $(-2)(-4)(-5)$.

(2 marks)

[1516 S.1 1st Exam MC Q1]

8. In figure 1, A and B are two directed numbers represented on a number line.

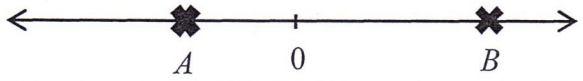


Figure 1

Which of the following expressions must be **positive** numbers?

I. $A+B$

II. $B-A$

III. $A\times B$

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

[1516 S.1 1st Exam MC Q2]

9. Which of the following expressions will give negative results?

I. $\dfrac{+12}{-4}$

II. $-2-5$

III. $(-4)^3$

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

[1516 S.1 1st Exam SQ Q1]

10. Evaluate $(-15)-[(-8)-(+14)]$.

(2 marks)

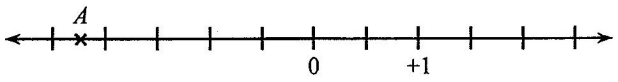
[1516 S.1 1st Exam SQ Q2]

11. Evaluate $\dfrac{(-8)+(+6)(-5)}{(+2)}$.

(3 marks)

[1617 S.1 1st Exam MC Q1]

12. Which number may the letter A on the following number line represent?



A. $-2\frac{1}{4}$

B. $-2\frac{1}{2}$

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

D. $-4\frac{1}{2}$

[1617 S.1 1st Exam MC Q2]

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

A. ab

B. $\frac{a}{b}$

C. $a - b$

D. $a + b$

[1617 S.1 1st Exam SQ Q1]

14. (a) Evaluate $(-17) + (-12)$. (1 mark)

(b) Evaluate $30 - 4(-3)$. (2 marks)

(c) Evaluate $\frac{(+4) - (-7)(-2)}{(-2)}$. (2 marks)

[1718 S.1 1st Exam MC Q1]

15. Which of the following gives a result that is different from the others?

A. $(-2) + (+8)$

B. $(-3) - (-9)$

C. $(-2) \times (+3)$

D. $(-18) \div (-3)$

[1718 S.1 1st Exam MC Q2]

16. Which of the following descriptions about the number line in Figure 1 is **INCORRECT**?

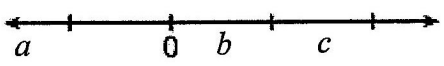


Figure 1

A. b is a positive number.

B. a is a negative number.

C. $a > c$

D. $b > a$

[1718 S.1 1st Exam FQ Q11]

17. Suppose that "+ 5 m" means 5 m to the north of a point P.

(a) Express each of the following using a directed number. (2 marks)

(i) 25 m to the north of the point P.

(ii) 12m to the south of the point P.

(b) What is the meaning of "– 27 m"? (1 mark)

[1718 S.1 1st Exam FQ Q12]

18. (a) Evaluate $(+7)(-2)$. (1 mark)

(b) Evaluate $\dfrac{(+6)-(+7)(-2)}{-10}$. (2 marks)

[1819 S.1 1st Exam MC Q1]

19. Which of the following numbers are arranged in descending order?

A. +8, +7, –6, –5

B. –18, –16, –14, –12

C. +11, +14, –14, –11

D. –6, –7, –8, –13

[1819 S.1 1st Exam MC Q2]

20. If $a > 0$ and $b < 0$, which of the following result(s) is / are always **CORRECT**?

I. $a - b > 0$

II. $a + b < 0$

III. $a \times b < 0$

IV. $a \div b < 0$

A. I only

B. II and IV only

C. I, III and IV only

D. I, II, III and IV

[1819 S.1 1st Exam BQ Q11]

21. Evaluate each of the following. (4 marks)

(a) $(-3) + (-4) - (-8)$

(b) $-25 - (+85) \div (-5)$

[1819 S.1 1st Exam IQ Q16]

22. In a test, there are 35 multiple choice questions. 3 marks are awarded for each correct answer. 2 marks are deducted for each wrong answer. 1 mark is deducted for each unanswered question.

(a) Jackson answered 30 questions only and made 4 mistakes. What is his final score? (2 marks)

(b) Jessica answered 32 questions and the minimum number of correct answers she obtained was 25. What is her lowest possible score? (2 marks)

[1920 S.1 UT MC Q1]

23. The sum of the first 4 natural numbers is

A. 6.

B. 10.

C. 15.

D. 20.

[1920 S.1 UT MC Q3]

24. Arrange the following numbers in ascending order.

$-5,\ +3,\ -10,\ +6$

A. $+6,\ +3,\ -5,\ -10$

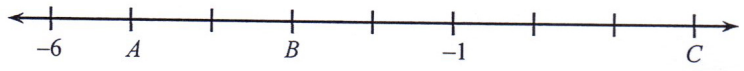
B. $+6,\ +3,\ -10,\ -5$

C. $-10,\ -5,\ +3,\ +6$

D. $-5,\ -10,\ +3,\ +6$

[1920 S.1 UT BQ Q11]

25. Write down the numbers represented by A, B and C on the number line below. (3 marks)



$A =$ _____ , $B =$ _____ , $C =$ _____

$A =$ _____ , $B =$ _____ , $C =$ _____

[1920 S.1 UT IQ Q16]

26. -11 is subtracted from -35, and the difference is divided by the sum of -8 and $+12$, find the result.

[1920 S.1 Exam MC Q1]

27. Which of the following are correct ?

I. $-2 < -\frac{1}{2}$ II. $(-3)^2 = -3^2$ III. $-4-5=-9$

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

[2021 S.1 ASUT MC Q3]

Arrange the following numbers in descending order.

$-9,\ +4,\ -10,\ -1$

A. $+4,-1,-10,-9$
B. $+4,-1,-9,-10$
C. $-9,-10,-1,+4$
D. $-10,-9,-1,+4$

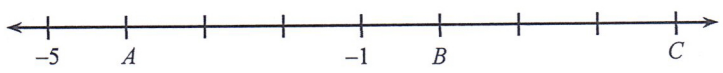
[2021 S.1 ASUT MC Q4]

a, b and c are three negative numbers. Which of the following expressions is negative?

A. $a-(-b)\div(-c)$
B. $(-a)(-b)\div(-c)$
C. $(-a)\div(-b)$
D. $(-a)(-b)(-c)$

[2021 S.1 ASUT BQ Q11]

Write down the numbers represented by A, B and C on the number line below. (3 marks)



$A =$ _____ , $B =$ _____ , $C =$ _____

[2021 S.1 ASUT BQ Q12]

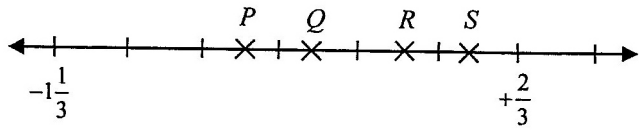
Evaluate each of the following.

(a) $-3-(-1)+5$ (2 marks)

(b) $\dfrac{-24}{-6(-1)}$ (2 marks)

[2021 S.1 Final Exam MC Q1]

Which of the following points on the number line below may represent –0.2?



A. P

B. Q

C. R

D. S

[2122 S.1 ASUT MC Q3]

33. Rearrange $+\dfrac{3}{2}$, -1.7, $-\dfrac{5}{3}$, 0 in ascending order.

A. $-1.7<-\dfrac{5}{3}<0<+\dfrac{3}{2}$

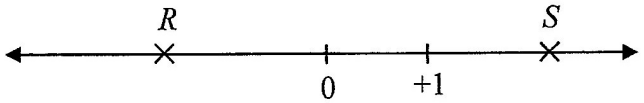
B. $-\dfrac{5}{3}<-1.7<0<+\dfrac{3}{2}$

C. $+\dfrac{3}{2}>0>-\dfrac{5}{3}>-1.7$

D. $+\dfrac{3}{2}>0>-1.7>-\dfrac{5}{3}$

[2122 S.1 ASUT MC Q6]

34. Which of the following must be true?



I. $R \times S < 0$ II. $R \div S > 0$ III. $R - S > 0$

A. I only

B. II only

C. I and III only

D. II and III only

[2122 S.1 ASUT BC Q13]

35. Evaluate each of the following.

(a) $(-3) + (-17)$ (1 mark)

(b) $[(-3) + (-17)] \div [(-14) - (-18)]$ (2 marks)

[2122 S.1 ASUT BC Q17]

36. A heater of temperature 60°C is put at the middle of a straight corridor in a house. Suppose the air temperature is decreased by 2°C for every 10 cm away from the heater. (You may ignore the room temperature in the house without the heater.)

(a) What is the air temperature 1.5 m away from the heater? (3 marks)

(b) Jessica thinks that 24°C is the most comfortable temperature. How far should she stay from the heater? (2 marks)

[2122 S.1 Final Exam MC Q1]

37. If $a < 0$ and $b > 0$, which of the following must be a positive number?

A. ab

B. $\frac{a}{b}$

C. $a + b$

D. $b - a$

[2223 S.1 ASUT MC Q3]

38. The following table shows the changes in temperature last week as compared with the previous day. Assume that –0.5°C represents a drop of 0.5°C in the temperature.

Day	**Tue**	**Wed**	**Thu**	**Fri**
Change in temperature (°C)	–0.3	+0.8	+0.4	–1.5

On which day of last week, the temperature is the highest?

A. Monday

B. Tuesday

C. Wednesday

D. Thursday

[2223 S.1 ASUT MC Q4]

39. Which of the following is true?

A. $+2 < 0 < +5 < +7$

B. $-6 < -10 < -12 < -13$

C. $-5 < -2 < +2 < +8$

D. $-15 < -18 < +15 < +18$

[2223 S.1 ASUT BQ Q11]

40. Evaluate each of the following.

(a) $(-21) - (-9)$

(b) $(-14) \times (+5)$

(c) $(+168) \div (-6)$

(3 marks)

[2223 S.1 Final Exam MC Q1]

41. How many negative integers are there between –5.1 and +2.7?

A. 5
B. 6
C. 7
D. 8