

TB(1A) Ch. 1 Directed Numbers & the Number Line

Conventional Questions

1. [11-12 Standardized Test 1, 2]

Evaluate $\left[6 \times \left(-\frac{8}{3}\right) - (-10) \times 2\right] + (-28) \div 0.7$. (3 marks)

2. [11-12 Standardized Test 1, 5]

Evaluate $\frac{1}{2} - 10 \frac{1}{2} \times \left(-5 \frac{1}{3}\right) \div \left[-4 + \left(-\frac{2}{3}\right)\right]$. (4 marks)

3. [11-12 Standardized Test 1, 6]

John can walk 4 km every hour and run 5 km every hour. He starts from his home and walks to the north for 1.2 hours. Then he runs to the south for 0.5 hour. After taking a rest, he walks to the south for 1 hour. If the positions on the north of his home are represented by positive numbers, use a directed number to represent his final position. (3 marks)

4. [11-12 Mid-year]

Find the value of $(+5) - (-7) + \left(-5 \frac{1}{3}\right) \div 2 \frac{2}{3} + 1 \frac{1}{3}$. (4 marks)

5. [11-12 Final, 3]

Calculate $\left[-\frac{3}{4} - \left(-2 \frac{2}{3}\right) \times \frac{1}{4}\right] \div \left[\frac{1}{6} + \left(-\frac{3}{8}\right)\right]$. (4 marks)

6. [12-13 Standardized Test 1]

Find the value of the following expressions.

(a) $\frac{1 - (6 - 2.5 \times 3)}{-5 + (-3)}$ (3 marks)

(b) $\frac{8}{9} - \frac{3}{5} + 0.4 \div \frac{0}{8} - \frac{3}{16} \div \frac{0}{8} \times 2 \frac{1}{4}$ (3 marks)

7. [12-13 Standardized Test 1]

Amy measures her body temperature every day and her body temperature is 36.5°C on Monday. She takes an increase as a positive number and records the following changes in her body temperature from Tuesday to Friday.

Day	Tuesday	Wednesday	Thursday	Friday
Temperature change ($^{\circ}\text{C}$)	-0.5	+1.8	-2.1	+3.4

- (a) Use a directed number to represent the total change in Amy's body temperature from Tuesday to Friday. (2 marks)
- (b) Students are not recommended to go to school if their body temperature is above or equal to 38°C . Should Amy go to school on Friday? Explain. (3 marks)

8. [12-13 Standardized Test 1]

Find the value of $-\left(\frac{5}{2}-\frac{8}{3}\right)\div\frac{5}{6}+\frac{2}{15}\times\left(-1\frac{1}{2}\right)$.

(3 marks)

9. [12-13 Mid-year 7]

The temperatures of city A and city B are 5°C and -3°C respectively today afternoon. If the temperature of city A remains the same, while that of city B decreases by 7°C at night, what is the difference between the temperatures of cities A and B at night?

(3 marks)

10. [13-14 Standardized Test 1]

Evaluate

(a) $\left(\frac{0.6}{0.02}\right)\times\left[-\frac{3}{4}+\left(-\frac{2}{5}\right)-\left(+\frac{1}{6}\right)\right]$.

(4 marks)

(b) $-4^2\times(-1)^4-(-16)\div(-4)^2$.

(3 marks)

11. [13-14 Standardized Test 1]

Figure 1 shows a dartboard. The scores obtained for hitting different regions are shown below:

Region	Score
A	+9
B	+4
C	-5
Outside the dartboard	-10

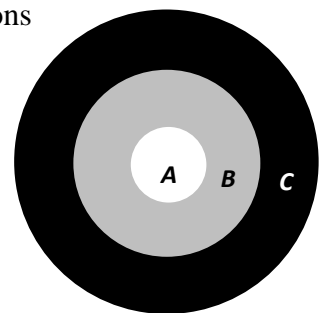


Figure 1

Sally throws 12 darts, in which 2 hit region A, 5 hit region B, 3 hit region C and 2 fall outside the dartboard. Find her score. (3 marks)

12. [13-14 Standardized Test 1]

The temperature ($^{\circ}\text{C}$) of a room is measured every hour from 09:00 to 15:00. The change of temperature in each hour was recorded as follows.

$$+0.4^{\circ}\text{C}, +0.9^{\circ}\text{C}, +1.5^{\circ}\text{C}, -0.5^{\circ}\text{C}, -1^{\circ}\text{C}, -1.3^{\circ}\text{C}.$$

“ $+0.4^{\circ}\text{C}$ ” represents that the temperature increased by 0.4°C from 9:00 to 10:00.

It is known that the temperature recorded at 9:00 was 28.7°C .

- (a) Find the highest temperature recorded. **(2 marks)**
- (b) Chloe claims, “the lowest temperature was recorded at two different times.” Do you agree? Explain briefly. **(3 marks)**

13. [13-14 Mid-year Exam]

Find the value of $-\frac{24 \times 0.6}{8} + \left(\frac{1}{4} - \frac{1}{9} \times \frac{3^2}{25}\right)$. **(3 marks)**

14. [13-14 Mid-year Exam]

There are 5 multiple-choice questions in a quiz. The marks are calculated according to the following rules.

- I. 5 marks will be given for a correct answer.
II. 2 marks will be deducted for an incorrect answer.
III. 1 mark will be deducted for a blank answer.

The following table shows the performance of Tom and Ada.

Question no.	Correct answer	Tom's answer	Ada's answer
1	A	A	A
2	B	D	B
3	B	B	B
4	C	C	–
5	D	B	A

Explain, with calculations, who achieves a better result. **(4 marks)**

15. [14-15 Mid-year Exam]

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

16. [14-15 Mid-year Exam]

In the first round of a Mathematics contest, there are 25 questions. 4 points are awarded for each correct answer. 2 points are deducted for each incorrect answer and 1 point is deducted for each blank answer. Contestants will enter the second round if they score 75 marks or above in the first round. Explain whether Tom can enter the second round if he has 3 incorrect answers and 2 blank answers. **(4 marks)**

17. [15-16 Mid-year Exam]

Find the values of each of the following expressions.

(a) $\left(3\frac{3}{4} - 3\frac{1}{2}\right) \div 1\frac{7}{8}$ (3 marks)

(b) $-33 + 81 \div (-3) - 9 \times (-6)$ (2 marks)

18. [15-16 Mid-year Exam]

Figure 1 shows a dartboard. The scores obtained for hitting different regions are shown below:

Region	Score
A	3
B	2
Outside the dartboard	-2

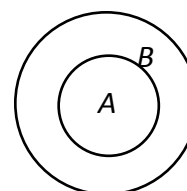


Figure 1

Peter throws 10 darts, of which 3 darts hit region A, 2 darts hit region B. Find his total score.

(2 marks)

~ End ~