

TB(1A) Ch. 2 Directed Numbers

Conventional Questions

1. [16-17 Mid-year Exam, #2]

Evaluate the following expressions.

(a) $-\frac{1}{2} + \frac{1}{6}$. (1 mark)

(b) $(-8) - (-2) \div (+6)$. (2 marks)

2. [16-17 Mid-year Exam, #3]

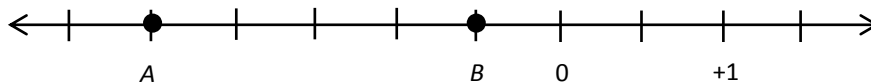
It is given that +2 kg means an increase in weight of 2 kg.

(a) Use a directed number to represent a decrease in weight of 6 kg. (1 mark)

(b) The weight of Dickson is 50 kg in April. If his weight is increased by 6 kg in May and is decreased by 9.5 kg in June. Find his weight in the beginning of July. (2 marks)

3. [17-18 Standardized Test #1]

Consider the following number line.



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

$A = \underline{\hspace{2cm}}$ $B = \underline{\hspace{2cm}}$

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

4. [17-18 Standardized Test #2]

(a) Arrange the following numbers in ascending order of magnitude and use '<' to express the answer.

$-\frac{1}{4}, -3, +5, 0, \frac{19}{4}, -10$ (1 mark)

(b) Calculate $[8 - (-4)(-3)] \div (-2)$. (2 marks)

5. [17-18 Mid-term Exam, #1]

Find the values of the following expressions.

(a) $6 - 8 \times 4 \div 3 + 2$ (2 marks)

(b) $\frac{3}{2} \div \left(-\frac{48}{5}\right) \div \left(-3\frac{1}{8}\right)$ (2 marks)

6. [17-18 Mid-term Exam, #10]

There are 25 questions in a test. Five marks will be awarded for each correct answer, one mark will be deducted for each wrong answer and three marks will be deducted for each blank answer.

(a) Elaine answered 19 questions and got 18 of them correct. Find Elaine's score. (2 marks)

(b) Gigi only knows the correct answers of 17 questions. She claims that her score must be lower than Elaine's. Do you agree? Explain your answer. (2 marks)

7. [18-19 Standardized Test #2]

(a) Evaluate $-8 - (-2)^2$. (2 marks)

(b) Evaluate $\left[\frac{3}{7} \times (-14) - \left(\frac{1}{2} - 1\right)\right] \div \left(-\frac{3}{2}\right)$. (3 marks)

8. [18-19 Mid-term Exam, #2]

Find the values of the following expressions.

(a) $-2 - \frac{8}{-3 - (-7)}$ (2 marks)

(b) $\frac{3}{4} \times \left(-\frac{8}{15}\right) \div \left(-3\frac{1}{5}\right)$ (2 marks)

9. [18-19 Mid-term Exam, #3]

There are 25 multiple choice questions in a quiz. 3 marks are awarded for each correct answer, but 2 marks are deducted for each wrong or blank answer. If Mandy answers 16 questions correctly, how many marks can she get in the quiz?

10. [19-20 Standardized Test 1, #1]

Suppose +\$500 means an amount of \$500 deposited in a bank. Use a directed number to describe \$1200 is withdrawn from the bank. (1 mark)

Write down the sum of the first 3 common multiples of the two numbers. (1 mark)

11. [19-20 Standardized Test 1, #2]

Evaluate $(-14)(-9) - (+25)(-6)$. (2 marks)

12. [19-20 Standardized Test 1, #6]

Evaluate $(-5) + \frac{(-12) - (-13)}{(+6) - (+11)}$. (3 marks)

13. [19-20 Standardized Test 1, #9]

(a) Find the value of $-1 + 2(-1)^2$. (1 mark)

(b) Hence, or otherwise, find the value of $-1 + 2(-1)^2 + 3(-1)^3 + 4(-1)^4 + \dots + 2015(-1)^{2015} + 2016(-1)^{2016} + 2017(-1)^{2017}$. (2 marks)

14. [19-20 Mid-Year, #2]

Evaluate

(a) $3(-2)^2 - 20$, (2 marks)

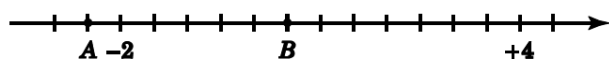
(b) $(+\frac{12}{5}) \div (-\frac{2}{5}) \times (-4)$. (2 marks)

15. [19-20 Mid-Year, #7]

In the morning, the value of Victor's Octopus card was $-\$2$. He added $\$50$ to the Octopus card in the afternoon and bought a pack of candies with $\$16.9$ using the Octopus card. Find the value of Victor's Octopus card at last. (2 marks)

16. [20-21 Mid-Year, #1]

Consider the following number line. (2 marks)



Write down the directed numbers represented by A and B .

A : _____ B : _____

17. [20-21 Mid-Year, #8]

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

(3 marks)

18. [20-21 Mid-Year, #11]

The energy (E Joules) absorbed by a liquid when it is heating can be calculated by $E = 4200mT$ where m kg is the mass of the liquid and T °C is the change in temperature of the liquid during heating process. When 1.5 kg of this liquid is heated, it absorbed 25200 Joules and the final temperature is raised to -24 °C. Find the original temperature of the liquid before it is heated.

(4 marks)

19. [20-21 Final Exam, #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)

~ End ~