

S.K.H. St. Simon's Lui Ming Choi Secondary School
Form 1 Mathematics Summer Tiered Assignment

Name : _____

Class : _____()

Instructions:

1. Finish all questions except the ones with **.
2. Class 1D students **should complete** all ** questions. Other students **should attempt** the ** questions as much as possible.

S.K.H. St. Simon's Lui Ming Choi Secondary School

Form 1 Mathematics Tiered Assignment

Chapter 2 Chapter 11

Name : _____ Class : _____() Date : _____

1. In each of the following, use a directed number to represent the situation opposite to the given one.

(a) $-\$600$ represents a decrease of $\$600$ in profit.

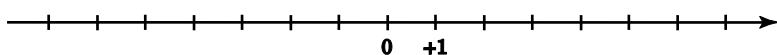
(b) $+10$ cm represents 10 cm to the east of a mailbox.

2. In each of the following, write down the opposite number of the given number.

(a) -26

(b) $-\frac{4}{5}$

3. In each of the following, mark the number and its opposite number on the number line below.



(a) $+2$

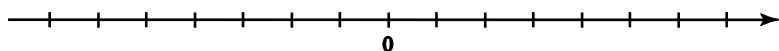
(b) -5

(c) $+7$

4. Use a number line to find the result of each of the following expressions.

(a) $(+3) + (-9)$

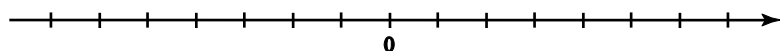
(b) $(-2) + (+7)$



5. Use a number line to find the result of each of the following expressions.

(a) $(-2) - (+5)$

(b) $(+3) - (+4)$



6. First remove the brackets, then evaluate the following expressions.

(a) $(+6) + (-15)$

(b) $(-2) + (-18)$

7. Evaluate the following expressions.

(a) $(-2) \times (+3) \times (+4)$

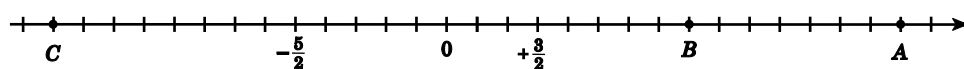
(b) $(+8) \times (-1) \times (-7)$

8. Represent each of the following word phrases by an expression and evaluate the expression.

(a) Multiply -3 by $+8$.

(b) Add -3 to the product of -2 and $+5$.

** 9. Refer to the number line below.

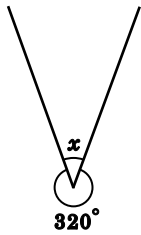


(a) Write down the directed numbers represented by A , B and C .

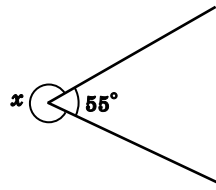
(b) How many integers are greater than C and smaller than B ?

Find x in each of the following figures. [Nos. 12–13]

12.

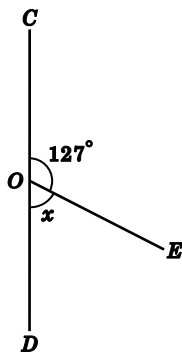


13.

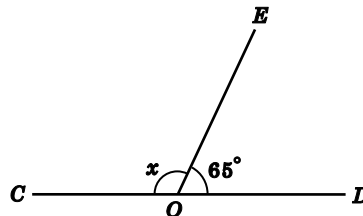


In each of the following figures, COD is a straight line. Find x . [Nos. 14–15]

14.

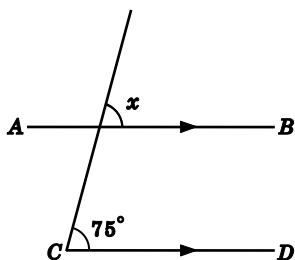


15.

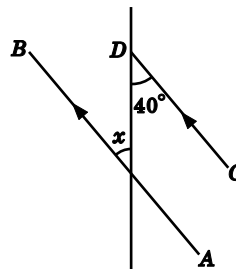


In each of the following figures, $AB \parallel CD$. Find x . [Nos. 16–17]

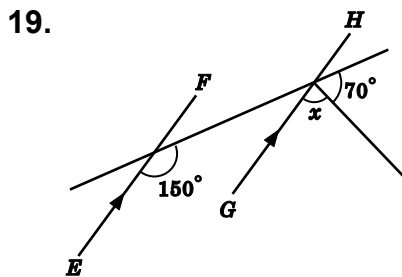
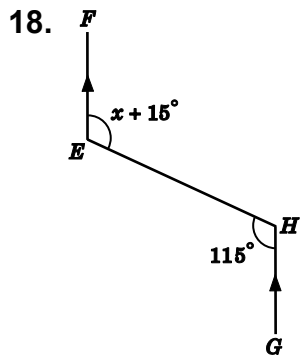
16.



17.

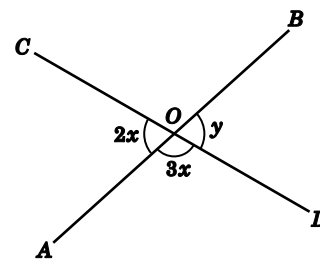


In each of the following figures, $EF \parallel GH$. Find x . [Nos. 18–19]



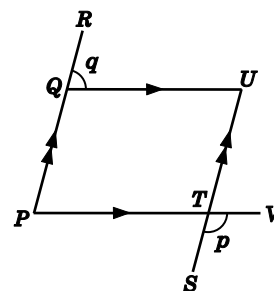
** 20. In the figure, AOB and COD are straight lines.

- (a) Find x and y .
- (b) Find reflex $\angle BOC$.



**21. In the figure, $PR \parallel SU$ and $QU \parallel PV$. Is it true that $p + q = 180^\circ$?

Explain your answer.



Chapter 4 Linear Equations in One Unknown

Tiered Assignment

Solve the following equations. (1 – 20):

1. $2x + 1 = 5$

5. $-7c = 21 - 4c$

2. $3x + 2 = 23$

6. $27 + 5x = -18 + 6x$

3. $1 - 4x = 17$

7. $3x - 6 = 2x + 9$

4. $31 - \frac{3x}{4} = 19$

8. $-7x + 12 = -9 - 4x$

$$9. x+9=2(6-x)$$

$$13. \frac{1}{3}(2x-1)=5$$

$$10. -2(7-11x)=8x$$

$$14. \frac{7-5z}{3}=-2z$$

$$11. 4(3x-3)=5x-19$$

$$15. \frac{7(3y+5)}{5}=-14$$

$$12. \frac{1}{6}x + 1 = \frac{5}{6}$$

$$16. \frac{3(x-2)}{7} + 4 = -20$$

$$**17. \frac{p}{3} - \frac{3p}{4} = 5$$

$$**19. \frac{r-1}{9} = \frac{2r+1}{6}$$

$$**18. \frac{x}{6} - 5 = -\frac{x}{9}$$

$$**20. \frac{4x+1}{3} = \frac{30-x}{2}$$

21. When x is added to the product of 4 and x , the result is -10 . Find the value of x .

22. Peter has 19 comic books and Daisy has 23 comic books. If Daisy gives some comic books to Peter, both of them will have the same number of comic books. How many books does Daisy give to Peter?
23. Peter has y candies. Daisy has 3 candies more than 2 times the candies Peter has. If the difference between the numbers of candies Peter and Daisy have is 17, find the value of y ?
24. Peter pays \$28 for 2 packs of Shanghai noodles and a pack of green tea noodles. Given that the price of a pack of green tea noodles is \$6, find the price of a pack of Shanghai noodles.
- **25. Peter is 6 years older than Daisy. After 3 years, Peter will be twice as old as Daisy. Find Daisy's present age.

SKH St. Simon's Lui Ming Choi Secondary School
Form 1 Mathematics Chapter 10 Manipulation of Simple Polynomials
Tiered Assignment

Name: _____ Class: _____ () Date: _____

Laws of Positive Integral Indices: Key Points

1. If both m and n are positive integers, then

$$a^m \times a^n = a^{m+n}$$

2. If $a \neq 0$ and both m and n are positive integers, then

(i) $a^m \div a^n = \frac{a^m}{a^n} = a^{m-n}$, where $m > n$

(ii) $a^m \div a^n = \frac{a^m}{a^n} = \frac{1}{a^{n-m}}$, where $m < n$

Simplify the following expressions. [1–7]

1. (a) $p^2 \times p^3$

(b) $h^4 \times h^3$

2. (a) $2t^6 \times 3t^4$

(b) $4x^5 \times 3x^2$

3. (a) $\frac{u^8}{u^6}$

(b) $w^2 \div (-w^5)$

4. (a) $x^5 \div 2x^3$

(b) $\frac{6y^2}{3y^6}$

5. (a) $t^4 \times 3t^2 \times 5t^5$

(b) $u^9 \div u^3 \div u^4$

6. (a) $4w^2z^5 \times 6w^7z^3$

(b) $35p^4q^{11} \div 7pq^5$

7**. (a) $30a^4b^3 \div (-5ab^2) \times 2a^6b$

(b) $6x^2y^8 \times x^5y \div (-24xy^3)$

Do you remember?

Addition and subtraction of polynomials

e.g. $(2x - 3) + (5x + 8) = 2x - 3 + 5x + 8$
 $= 2x + 5x - 3 + 8$
 $= \underline{7x + 5}$

e.g. $(3x + 4y) - (2x + 5y - 1) = 3x + 4y - 2x - 5y + 1$
 $= 3x - 2x + 4y - 5y + 1$
 $= \underline{\underline{x - y + 1}}$

Simplify the following expressions. (8 – 12)

8. (a) $(3x - 6) + (4x + 1)$

(b) $(8b + 3) + (2b - 9)$

9. (a) $(2h - 1) - (7h + 2)$

(b) $(k + 6) - (8k - 7)$

10. (a) $(2c^2 - 5) + (-5 - 2c^2)$

(b) $(3d - 4d^2) - (d^2 + 7d)$

11. (a) $(3u - v + 2) + (u - 3v - 4)$

(b) $(2d + 5e - 6f) - (4d - 6f - 5e)$

12. (a) $(m^3 + 3m - 5) + (4m^3 - 6m - 7)$

(b) $(2n^3 - 3n^2 - 5n + 8) + (2n - 4n^3 - 3 + 6n^2)$

13**. Peter has $\$(4x^2 + 2)$ and Tom has $\$(9x - 7 - x^2)$.

(a) How much do they have altogether? (*Express the answers in terms of x .*)

(b) Peter and Tom want to buy a toy together but the total amount they have is not enough. If the price of the toy is $\$(5x^2 - 4x + 3)$, how much more do they need? (*Express the answers in terms of x .*)

Do you remember?

Multiplication of polynomials

e.g. $2(x+4) = 2(x) + 2(4) = \underline{\underline{2x+8}}$

$(3y-2)y = (3y)y - (2)y = \underline{\underline{3y^2 - 2y}}$

Do you remember?

Multiplication of polynomials

e.g. $(x+1)(2x-4)$
 $= (x+1)(2x) + (x+1)(-4)$
 $= 2x^2 + 2x - 4x - 4$
 $= 2x^2 - 2x - 4$

Expand and simplify the following expressions. (14 – 19)

14. (a) $9(m + 5)$

(b) $(2n - 3)(-4)$

15. (a) $a(a + 2)$

(b) $-b(1 - 6b)$

16. (a) $(a + 3)(a + 5)$

(b) $(b - 4)(b + 1)$

17**. (a) $(h + k)(h - k)$

(b) $(m + 2p)(-9m + 4p)$

18**. $(m+1)(m-3)(m-1)(m+3)$ (Hints: Use the result of 17a)

SKH St. Simon's Lui Ming Choi Secondary School
Form 1 Mathematics Tiered Assignment
Chapter 7 Percentages (I)

Name: _____ Class: _____ () Date: _____ Teacher: _____

1. There are 18 red balls and 40 green balls in a box. What percentage of the number of green balls is that of red balls?

2. In a class of 40 students, 35 of them are boys. Find the percentage of girls.

3. On a certain day, the total weight of the solid waste in a city is 13 900 tonnes, in which 46% is the domestic waste. Find the weight of the domestic waste.

4. In a box of 600 pieces of chocolate, 30% of them are dark chocolate and the rest are milk chocolate.
 - (a) How many pieces of milk chocolate are there?
 - (b) If 55% of the number of pieces of milk chocolate are star-shaped, find the number of pieces of star-shaped milk chocolate.

5. Last year, the tour fee for the East Europe tour of a travel agent was \$17 890. This year, the fee becomes \$21 468 for the same tour. Find the percentage increase.

6. The salary of each staff member of a company this year is increased by 5%. The salary of Mr Lee in this company last year was \$23 000. Find his new salary this year.

7. Yesterday, the closing price of the stocks of a company was \$158. Today, the closing price becomes \$142.2. Find the percentage decrease.

8. 2 The number of visitors of a theme park in 2012 was 1 million. In 2013, it was decreased by 25%.
 - (a) Find the number of visitors of the theme park in 2013.
 - (b) Suppose the percentage decrease in the number of visitors from 2013 to 2014 is the same as before. Find the decrease in the number of visitors in 2014.

9. The sales of a certain laptop computer were 300 last month. The percentage change in the sales this month is +15% as compared to last month. Find the change in the sales.
10. Mr Poon bought 30 handbags for \$85 each and sold them for \$3 570.
(a) Find the total profit.
(b) Find the profit per cent.
11. A car agent bought two second hand cars and sold them for \$108 000 each. If there is a loss of \$24 000, what is the loss per cent in selling the second hand cars?
12. The marked price of a dinnerware set is \$600 and the selling price is \$420. Find
(a) the discount
(b) the discount per cent.
13. A calculator marked at \$300 is sold at a discount of 40% in a book fair. How much is saved in buying such a calculator?

14. A calculator marked at \$160 is sold at a discount of 15%. Find the discount.
15. A TV set marked at \$5 200 is sold at a discount of 30%. What is the selling price?
16. Last year, P6 students in a primary school participated in the Secondary School Places Allocation (SSPA) System, and 75% of them admitted to their first choice secondary school. If 153 students in the school admitted to their first choice secondary school, how many students in the school participated in the SSPA System?
17. In a town, 3% of electors are below the age of 21. Suppose 3 395 electors are 21 years old or above.
- (a) How many electors are there in the town?
 - (b) If 1 785 electors are female, find the percentage of female electors in the town.

18. Thomas's height increases by 5% to 168 cm this year. Find his height last year.
19. After a 36% discount, a pair of boots is sold for \$256. What is the marked price?
20. Amy, Belle and Chris plan to have a dinner buffet. It is given that the standard price of the buffet is \$480 per head.
- (a) On every Saturday, the price will be changed to \$600 per head. Find the percentage change in price.
 - (b) On every Monday, the percentage change in the price is -15% . Find the total price if they have the buffet on a Monday.

21. **In a fast food restaurant, the selling price of a sandwich is \$20 and the cost price of a can of coke is \$2.
- (a) Given that the profit per cent obtained by selling a sandwich is 150%, find the cost price of a sandwich.
 - (b) A sandwich set consists of a sandwich and a can of coke. If such a sandwich set is available for sale at a profit of 130%, find its selling price.
22. **A merchant sold a monitor for \$1 680 and a printer for \$1 120. It is given that the monitor was sold at a loss of 30% and the printer was sold at a profit of 40%.
- (a) Find the cost prices of the monitor and the printer.
 - (b) On the whole, did he make a profit or loss? Explain your answer.
 - (c) Find the profit or loss per cent.

23. **In shop *A*, the marked price of a toaster is \$360 and it is sold at 40% discount. In shop *B*, a customer can buy the same toaster at a discount of 20% and saves \$55. If Keith wants to buy the toaster at a lower price, which shop should he choose? Explain your answer.

24. **A shopkeeper bought a packet of potato chips for \$10. Its marked price is 40% above its cost price. In a sale, the packet of potato chips is sold at a discount of 30%.

- (a) Find the marked price and selling price of the packet of potato chips.
- (b) Is there a profit or a loss? Explain your answer.
- (c) Find the profit or loss per cent.