

MHS Practice
Examination

Exam #2

563-100

MATHEMATICS
Secondary One
Year One (Grade 7)

SEC I

**Student
Question Booklet
Parts A, B and C**

- ✓ This resource can be used for FREE by any teacher or student with an active Math Help Services account
- ✓ Detailed video solutions to each question are available within your MHS account

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**Supporting Teachers
Developing Students**

Success on Summative Examinations

- ✓ The best way to prepare for a summative exam is to write multiple versions of that exam so that you become familiar with the format, the language and the time constraints.
- ✓ A memory aid is a much more valuable resource if you make it before you begin writing practice exams.
- ✓ We strongly suggest that you place yourself under the same time constraints while writing this exam as you will face when you write the ministry exam at the end of your course.
- ✓ Note that detailed video solutions to this exam are available in your *Math Help Services* account. Once your teacher makes the video solutions available you should watch the video solution to each question you had difficulty with to ensure that you know how to face this type of problem in the future.

Instructions

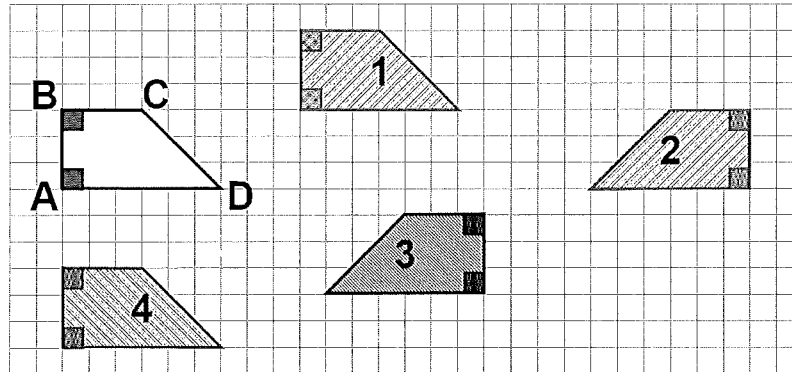
- ✓ You may use a calculator (with or without a graphic display), a ruler, a set square, a compass, a protractor or additional graph paper.
- ✓ You may refer to the memory aid you prepared on your own before the examination. This memory aid consists of one handwritten letter-sized sheet of paper (8 ½ x 11). Both sides of the sheet may be used. Any reproduction of this memory aid is forbidden.
- ✓ Only the above mentioned materials may be used.
- ✓ You have 3 hours to complete this examination.
- ✓ Note: Figures are not necessarily drawn to scale.

PART A

This part of the examination consists of Questions 1 to 6.
Identify the choice that best completes the statement or answers the

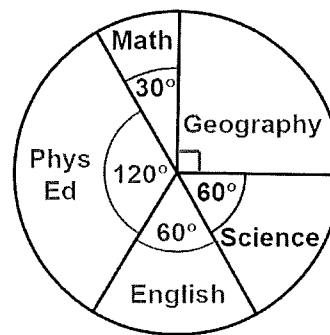
1. Which of the four images shown below was a result of reflecting figure **ABCD**.

- a) 1
- b) 2
- c) 3
- d) 4



2. The circle graph shown below displays the results from a survey of 300 grade 7 students. The students were asked what their favourite class was in the past year.

How many students said that their favourite class was science?



- a) 60
- b) 100
- c) 50
- d) 75

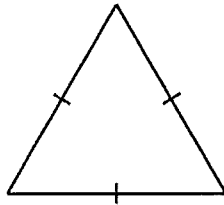
3. Alex, Bianca, Chrissy, and Devon are running in a 15 Km race. After 30 minutes
- Alex has run exactly 9 Km.
 - Bianca has completed $\frac{2}{3}$ of the race.
 - Chrissy still has 25% of the race left to finish.
 - Devon still has $\frac{1}{5}$ of the race left to complete.

Who is doing the worst after 30 minutes?

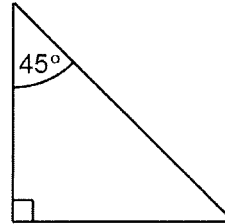
- a) Alex b) Bianca c) Chrissy d) Devon

4. Which of the following triangles is not an isosceles triangle?

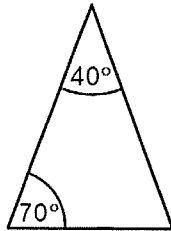
a)



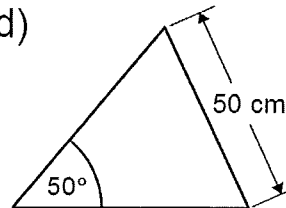
b)



c)



d)



5. Which of the following statements is true?

a) $-3^2 = (-3)^2$

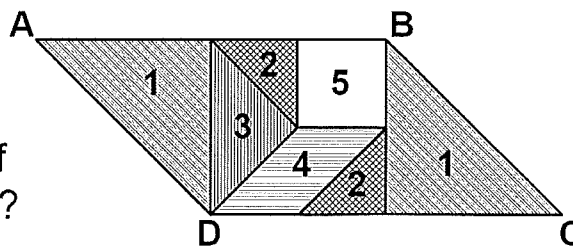
b) $10 \times 5^1 + 2^2 < 2^2 \times 5^1 + 10$

c) $-3 \times (4 + 2 \times 8) > -3 \times 4 + -3 \times 16$

d) $2^0 + 3^0 \times 5^0 = 5^0 \times 2^0 + 3^0$

6. The parallelogram ABCD shown below has an area of 1 m^2 . It has been divided into several different shapes. All of the triangles are right isosceles triangles and the shapes with the same colour and number are congruent.

What is the area of the red triangle (3)?



- a) $\frac{1}{4} \text{ m}^2$ b) $\frac{1}{5} \text{ m}^2$ c) $\frac{1}{7} \text{ m}^2$ d) $\frac{1}{8} \text{ m}^2$

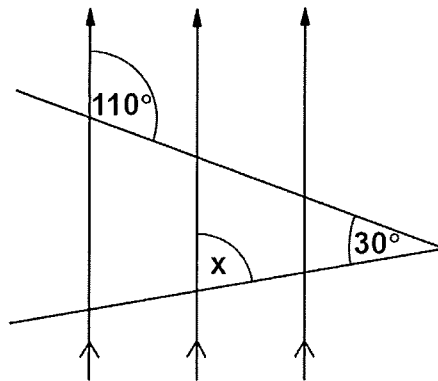
PART B

This part of the examination consists of Questions 7 to 10.
Short Answer: each question is graded on the basis of the correct answer only.

7. Determine the rule that could be used to describe the relationship between x and y in the table of values given below.

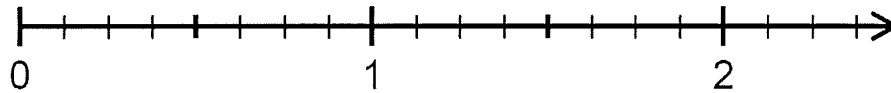
x	1	2	3	4	5	6
y	5	8	11	14	17	20

8. Given the diagram and the information below, determine the value of $\angle x$.

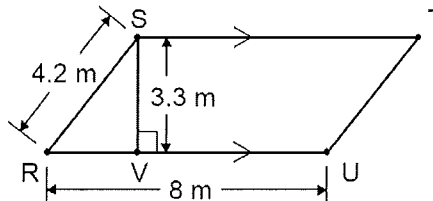
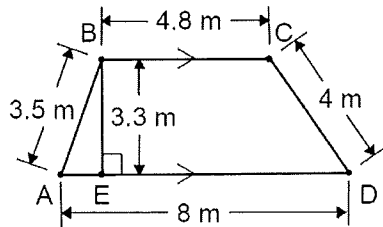


9. Correctly place the following 4 numbers on the number line given below.

$$\frac{17}{8}, \quad \frac{3}{4}, \quad 1\frac{1}{4}, \quad \frac{1}{2}$$



10. Ernie has an office in the shape of a trapezoid. Bert has an office in the shape of a parallelogram. Given the information in the diagrams below, whose office has the larger area and by how much?



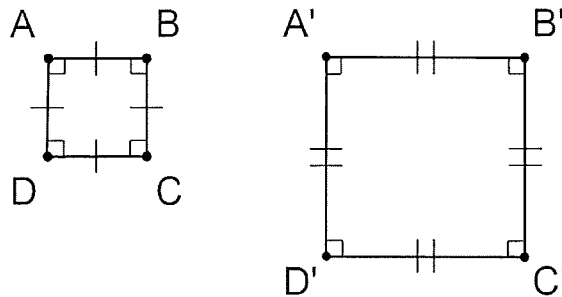
PART C

This part of the examination consists of Questions 11 to 16.

For each question, you must show all your work to justify your answer.

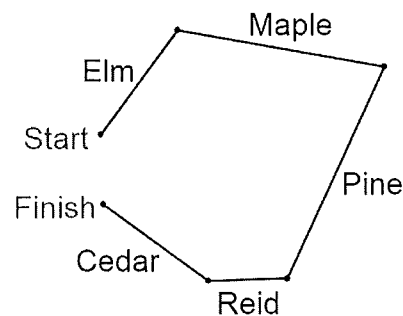
Your work must be organized and clearly presented and cannot simply involve listing the calculator applications or programs used to obtain results or information.

11. The area of square ABCD is 36 m^2 . If we double the length of its sides, what is the perimeter of the new square in dm.



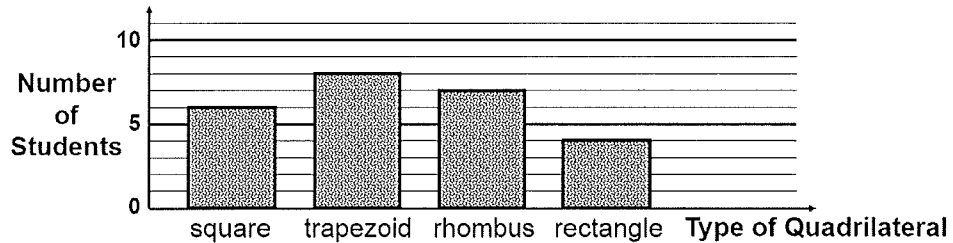
12. Lindsay Place High School participates in a Terry Fox Run every year. The length of the run is 5 Km. The students run the following route starting on Elm Street:

- $\frac{5}{6}$ Km on Elm Street
- $\frac{4}{3}$ Km on Maple Street
- $1\frac{1}{2}$ Km on Pine Street
- 500 m on Reid Street



How far do the students run along Cedar Street?

13. All of the students in a grade 7 Lakeside Academy math class were asked to name their favourite quadrilateral. The results of this census were organized into the bar graph shown below.



What percentage of the students said that their favourite quadrilateral was a parallelogram?

14. Carolyn is going to buy all of her new clothes for the summer at the same store because they are not charging any tax on their clothing if you are a student and they are also offering discounts on every item in the store. Complete the receipt shown below and calculate what Carolyn saved in total on all of her purchases.

Item	Quantity	Cost per Item	Total Cost	Sale	Cost After Discount
T-shirt	4	\$22.75		30% off	
Shorts	3	\$24.95		Buy 2 and get 1 free	
Sandals	1	\$39.75		1/3 off	
Swimsuit	3	\$27.50		Half price	
Total					

15. Denay wants to figure out how much money she will have at the end of the summer. She decides to make a list of what she will spend and what she will earn. If she has any money left over at the end of the summer, she will put $\frac{1}{4}$ of it in a savings account and use the rest of it for spending money. Here is her list:

- Starts the summer with \$520
- She gets 20 for an allowance for 8 weeks
- She makes \$150 a week for 8 weeks at summer camp.
- Every second week for 8 weeks she spends \$15 at the movies.
- 5 times a week for 8 weeks she buys her lunch which costs \$10 each time.
- At the end of the summer, she will buy a scooter for \$1000.

How much money will Denay put in her savings account?

16. All squares are similar to each other, but all rectangles are not similar to each other.

Use two examples to illustrate each situation, and formulate a conjecture.