WKF F2 2425 Term 2 Uniform Test Revision Exercise (Set B)

Term 2 Uniform Test 2024 – 2025
Revision Exercise (Set B)

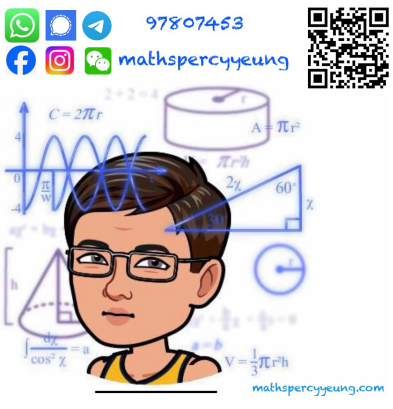
Grade:	G8	Name:	
Subject:	Mathematics	Class:	( )
Date:		Group No.:	
Time Allowed:	1 hour 30 minutes	Marks:	/ 74
Content:	Chapters: 1, 3, 5.1 & 10	Parent's Signature	

INSTRUCTIONS

This paper must be answered in English

1. This paper consists of Section A, Section B and Section C. Section A carries 30 marks, Section B carries 27 marks and Section C carries 17 marks.
2. Answer all the questions.
3. Use of HKEAA approved calculator is allowed.
4. The diagrams in this paper are not necessarily drawn to scale.
5. Write your answers in the answer sheet.
   (a) Section A: Multiple-choice Questions
   Put a "✓" in the appropriate boxes in Section A.
   (b) Section B: Short Questions
   (c) Section C: Long Questions
   In Section B and C, write your mathematical expressions, answers and statements/conclusions in the spaces provided. There is NO need to show the rough work.
6. Unless otherwise specified, numerical answers should be either **exact** or correct to **3 significant figures**.
7. Do your rough work in the rough worksheet provided.

Teacher's Use Only		
Question No.	Max. marks	Marks
Section A		
1-15 Sub-total	**30**	
Section B		
16	7	
17	6	
18	3	
19	6	
20	5	
Sub-total	**27**	
Section C		
21	9	
22	8	
Sub-total	**17**	



Section A: Multiple-choice Questions (30 marks)

Put "✓" in the appropriate boxes.

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
A															
B															
C															
D															

1. In a 50 m freestyle swimming competition, Peggy made a record of 30.27 s, correct to 4 significant figures. Find the maximum absolute error of the measurement.

   A. 0.005 s

   B. 0.01 s

   C. 0.05 s

   D. 0.1 s

2. Which of the following gives a maximum absolute error of 5 cm ?

   A. Scale interval = 5 cm

   B. 320 cm (cor. to 2 sig. fig.)

   C. 1320 cm (cor. to the nearest 5 cm)

   D. Upper limit = 920 cm, lower limit = 900 cm

3. The weight of a pack of sugar is measured as 350 g, correct to the nearest g. If the pack of sugar is divided into n packs such that the weight of sugar in each pack is measured as 10 g, correct to the nearest g, find the greatest possible value of n.

   A. 34

   B. 35

   C. 36

   D. 37

4. A leaf weighs 50 g with a percentage error of 0.5%. Find the range of its actual weight.

A. 45 g ≤ the actual weight < 55 g

B. 49 g ≤ the actual weight < 51 g

C. 49.5 g ≤ the actual weight < 49.5 g

D. 49.75 g ≤ the actual weight < 50.25 g

5. Which of the following(s) must be correct?

I. $\frac{4}{x}-\frac{2}{x}=\frac{2}{x}$

II. $\frac{x+6}{x+5}=\frac{6}{5}$

III. $\frac{2x}{y}\div\frac{y}{x}=2$

A. I only

B. II only

C. I and III only

D. II and III only

6. If $y=\frac{2x-3}{3x+2}$, then $x=$

A. $-\frac{2y+3}{3y-2}$.

B. $\frac{2y+3}{3y-2}$.

C. $\frac{2y+3}{3y+2}$.

D. $-\frac{2y+3}{3y+2}$.

7. $\dfrac{2}{x-3}-\dfrac{4}{3x-5}=$

A. $\dfrac{2(5x+1)}{(x-3)(3x-5)}$.

B. $\dfrac{2(5x-1)}{(x-3)(3x-5)}$.

C. $\dfrac{2(x-11)}{(x-3)(3x-5)}$.

D. $\dfrac{2(x+1)}{(x-3)(3x-5)}$.

8. Consider the formula $A=P\left(1+\dfrac{nr}{100}\right)$. If $A = 90$, $P = 60$ and $r = 5$, find n.

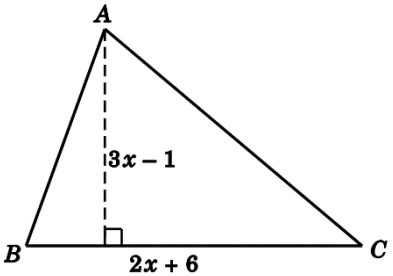
A. $\dfrac{1}{50}$

B. $\dfrac{1}{10}$

C. 10

D. 50

9. Express the area of $\triangle ABC$ in the figure in terms of x.



A. $3x^2 - 8x + 3$

B. $3x^2 + 8x - 3$

C. $6x^2 - 16x + 6$

D. $6x^2 + 16x - 6$

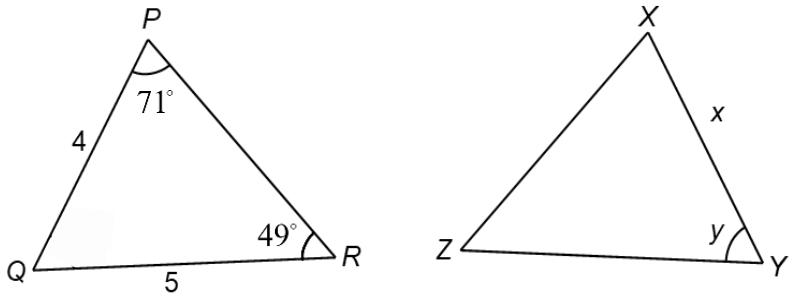
10. In the figure, if $\triangle PQR \cong \triangle XYZ$, then

A. $x = 4, y = 60°$.

B. $x = 4, y = 49°$.

C. $x = 5, y = 60°$.

D. $x = 5, y = 49°$.



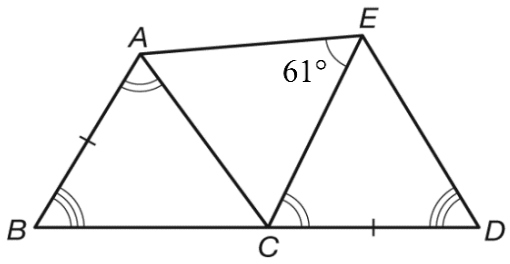
11. In the figure, $\Delta ABC \cong \Delta CDE$ and BCD is a straight line. Find $\angle ACE$.

A. 52°

B. 58°

C. 59.5°

D. 61°



12. Which of the following is/are **FALSE**?

I. $\sqrt{64} = 8$ or -8

II. $\sqrt[3]{-27} = -3$

III. $\sqrt[4]{16} = 4$

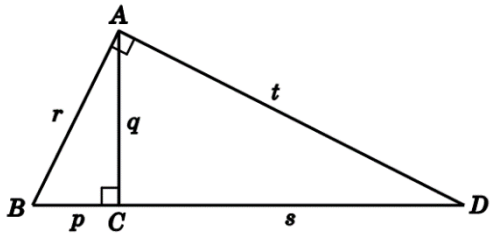
A. I only

B. II only

C. I and III only

D. II and III only

13. In the figure, $\angle BAD = 90°$. C is a point on BD such that $AC \perp BD$. Which of the following is/are correct?



I. $r^2 + t^2 = p^2 + s^2$

II. $(p + s)q = rt$

III. $q^2 + t^2 = 2ps + s^2$

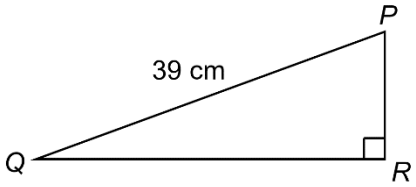
A. II only

B. I and III only

C. II and III only

D. I, II and III

14. In the figure, $PR : QR = 5 : 12$. Find the perimeter of $\triangle PQR$.



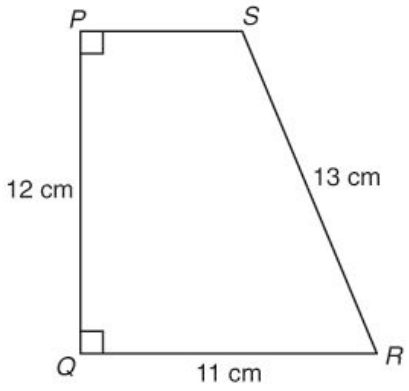
A. 540 cm

B. 124 cm

C. 107 cm

D. 90 cm

15. Find the area of trapezium $PQRS$ shown in the figure.



A. 96 cm^2

B. 102 cm^2

C. 192 cm^2

D. 204 cm^2

Section B: Short Questions (38 marks)

16. Simplify the following.

(a) $\dfrac{6hk^2+12h^2k}{8k^2+16hk}$ (2 marks)

(b) $\dfrac{5a}{7(a-4)}+\dfrac{8a}{21(4-a)}$ (2 marks)

(c) $\dfrac{m^2-4m+4}{8n^3}\div\dfrac{-4m+2m^2}{m^2n+2mn}\div\dfrac{m^2-4}{m^2n}$ (3 marks)

17. Simplify each of the followings and rationalize the denominator if applicable.

(a) $(\sqrt{6}-\sqrt{3})^2+\sqrt{32}$ (3 marks)

(b) $\frac{\sqrt{27}}{5}-\frac{9}{\sqrt{12}}$ (3 marks)

18. The unit price \$$P$ of a dress can be calculated by the following formula:

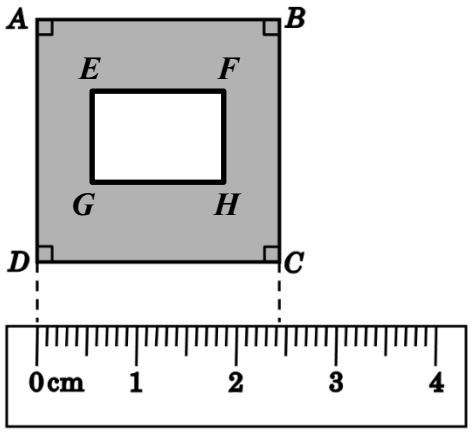
$$P = \frac{2500}{n} + 15,$$

where n is the number of dresses produced.

(a) Make n the subject of the formula. (1 mark)

(b) If the unit price of a dress is \$140, find the number of dresses produced. (2 marks)

19. In the figure, the length of a side of a square *ABCD* is measured by the given ruler.

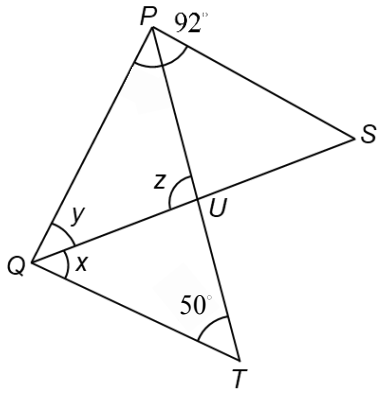


(a) What is the maximum absolute error of the measurement? (2 marks)

(b) If the dimension of rectangle *EFGH* is measured as 1.4 cm $\times$ 0.9 cm, is it possible for the actual area of the shaded region to be larger than 4.9 cm^2? Explain your answer.

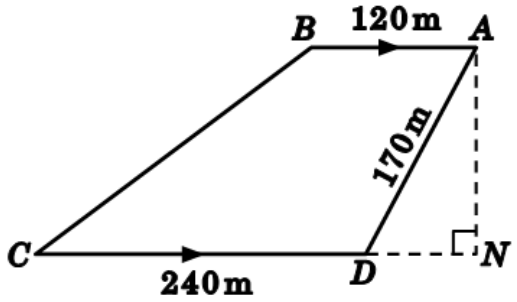
(4 marks)

20. In the figure, PUT and QUS are straight lines and $\triangle PTQ \cong \triangle QSP$. $\angle QTP = 50°$ and $\angle QPS = 92°$. Find x, y and z. (5 marks)



Section C: Long Questions (17 marks)

21. The figure shows a farm *ABCD* in the shape of a trapezium. It is given that *AB*, *BC*, *CD* and *DA* are 4 straight footpaths and the area of the trapezium *ABCD* is 27 000 m^2. *N* is a point outside the farm such that *CDN* is a straight line and $AN \perp CN$.



(a) Find the distance between *D* and *N*. (3 marks)

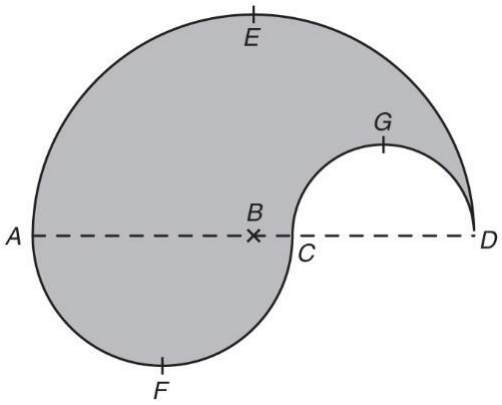
(b) David wants to walk from *A* to *C*. He can either choose the path *ABC* (i.e. via *B*) or the path *ADC* (i.e. via *D*). Which path, *ABC* or *ADC*, is shorter? Explain your answer. (6 marks)

22. The area S cm^2 of a semi-circle can be calculated by the following formula:

$$S = \frac{1}{2}\pi r^2,$$

where r cm is the radius of the semi-circle.

In the figure, C is a point on AD. AED, AFC and CGD are semi-circles, and their centres lie on AD, where B is the centre of semi-circle AED. It is given that $AB = a$ cm and $BC = b$ cm.



(a) Express the radii of semi-circles AFC and CGD in terms of a and b. (2 marks)

(b) Let A cm^2 be the area of the shaded region.

(i) Show that $A = \dfrac{\pi a(a+b)}{2}$. (3 marks)

(ii) Make b the subject of the formula in (b)(i). (2 marks)

(iii) If $A = 72\pi$ and $a = 10$, find the value of b. (1 mark)

END OF PAPER