

UNIT OF THE  
KOLEJ YAYASAN SAAD

**UNIT PEPERIKSAAN**  
**KOLEJ YAYASAN SAAD, MELAKA**

MID YEAR EXAMINATION 2010

FORM 2

MATHEMATICS

Kertas 2

MAY

$1\frac{3}{4}$  jam

50/2

SULIT

Satu jam empat puluh lima minit

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**JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU**

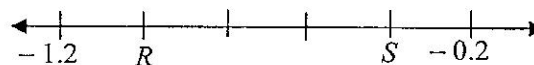
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1. *This question paper consists of 20 questions.*
2. *Answer all questions.*
3. *Write your answers clearly in the spaces provided in the question paper.*
4. *Show your working. It may help you to get marks.*
5. *If you wish to change your answer, neatly cross out the answer that you have done. Then write down the new answer.*
6. *The diagrams in the questions provided are not drawn to scale unless stated.*
7. *The marks allocated for each question are shown in brackets.*
8. *A list of formulae is provided.*
9. *The use of calculator is not allowed.*
10. *This question paper must be handed in at the end of the examination..*

Answer all questions

1 (a)  $-\frac{3}{4} + \frac{3}{10} \times 2\frac{1}{2} \div 3$

(b) The diagram below shows a number line.  
Find the value of  $R \div S$ .



2 Find the value of  $2 + \frac{4 - [25 + (-3)]}{(-2)(14 - 11)}$ .

[4 marks]

[2 marks]

3 Evaluate :

(a)  $(15.74 - 9.62) \div 3.4 + 7.05$ .

(b)  $(\frac{1}{3} \times 17.22) + (6.1 \div 5)$ .

[4 marks]

4 (a) Given  $7.19^2 = 51.7$ , find the value of  $\sqrt[4]{517\,000}$ .

[2 marks]

(b) Calculate the value of  $\sqrt[3]{\frac{37}{64}} - 1$ .

[2 marks]

5 Simplify the following.

(a)  $\frac{6hk^2 \times 14km^2}{-21hm}$

(b)  $(15 - 21p + 18q) \div (-3)$

[4 marks]

6 Simplify the expression  $4(3x - 5y) - \frac{5(8x - 6y)}{2}$ .

[3 marks]

Evaluate  $\frac{8ab^2 \times 4a^2c}{-2abc}$  given that  $a = 5$ ,  $b = -1$  and  $c = 3$ .

[3 marks]

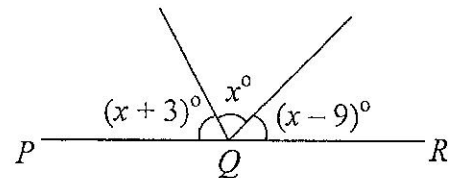
8 Solve the following equations.

(a)  $12 - 7r = 15 - 4r$

(b)  $\frac{2n}{5} - 3 = \frac{n}{4}$

9 In the diagram,  $PQR$  is a straight line. Find the value of  $x$ . [3 marks]

[4marks]



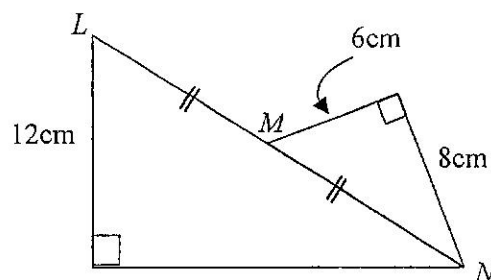
- 10 (a) A father is four times as old as his son. The difference in their ages is 36. Find the sum of their ages in 5 years' time. [2 marks]

- (b) Norah bought a chair and 7 bulbs at a price of RM39. Given that the cost of the chair is RM25 and that of each bulb is RM $y$ . Write a linear equation based on the above information. [2 marks]

- 11 A concentrated orange juice is mixed with water in the ratio of 5 parts of orange juice to 2 parts of water. If the volume of the mixture is 119 litres, what is the volume, in litres, of the concentrated orange juice in the mixture? [3 marks]

- 12 Given  $P : Q : R = 7 : 8 : 12$  and  $P + Q + R = 162$ , find the value of  $R - Q$ . [2 marks]

- 13 In the diagram,  $LMN$  is a straight line.  
Calculate the perimeter, in cm, of the whole figure.  
[3 marks]



- 14 A sum of money is divided among three persons,  $X$ ,  $Y$  and  $Z$ , in the ratio  $10 : 7 : 5$ . If  $Y$  gets RM 14 more than  $Z$ , what is the total sum of money?  
[2 marks]

- 15 Express each of the following ratios in its simplest form.

(a)  $2.4 : 1\frac{1}{5}$

(b)  $0.2\text{kg} : 40\text{g}$

[4 marks]

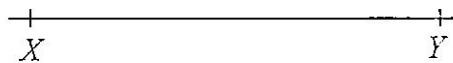
- 16 Given  $a : b = 2 : 3$  and  $b : c = 4 : 5$ . Calculate the ratio of  $a : b : c$ .

[2 marks]

17 Simplify  $4 [ 2x - 4(x - 3) ]$ . [2 marks]

18 Given that  $2.3^3 = 12.167$ , find the value of  $\sqrt[3]{0.012167}$ . [2 marks]

- 19 Using only a pair of compasses and a ruler, construct  $\triangle XYZ$  beginning from the straight line  $XY$  provided in the space below such that  $\angle XYZ = 120^\circ$  and  $YZ = 6.5$  cm. Hence, construct the perpendicular line from the point  $Y$  to the straight line  $XZ$ . [3 marks]



20 Solve the equation  $x - 2 = \frac{x - 4}{3}$ . [2 marks]