MENDAKI
P6 MATHEMATICS
PRELIMINARY EXAMINATION 2017

PAPER 1

1.	2	**6.**	4	**11.**	3
2.	3	**7.**	2	**12.**	4
3.	3	**8.**	2	**13.**	3
4.	4	**9.**	4	**14.**	3
5.	4	**10.**	1	**15.**	3

16. 20y + 9 + 2y - 15y

= 7y + 9

17. $\frac{2}{5}\ N = \frac{1}{4}\ D$

$\frac{2}{5}\ N = \frac{2}{8}\ D$

D : N = **8 : 5**

18. $4\frac{1}{4}$ % = 4.25 %

= **0.0425**

19. $3\frac{8}{50} - 1\ \frac{12}{25} = 3\ \frac{16}{100} - 1\ \frac{48}{100}$

= 3.16 – 1.48

= 1.68 ≈ **1.7**

20. $1 - \frac{1}{3} = \frac{2}{3}$ (Food and Transport)

$\frac{2}{3} - \frac{1}{4} = \frac{5}{12}$ (Transport $50)

$50 \div \frac{5}{12} = \mathbf{120}$

21. 300 – 100 – 200

6150 – 2550 = 3600

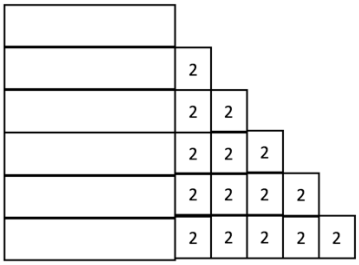
3600 ÷ 200 = 18

18 x 100 = 1800

2250 – 1800 = 750

750 g = **0.75 kg**

22. 54 x 6 = 324 (Total)



15 x 2 = 30

6 units → 324 – 30 = 294

1 unit → 294 ÷ 6 = 49

5 x 2 = 10

49 + 10 = **59**

23. $\frac{5}{7} \div 10 = \frac{1}{14}$

$1 \div \frac{1}{14} = \mathbf{14}$

24. 15 ÷ 3 = 5

10 – 7 = 3

7 x 5 x 3 = **105**

25. 20 ÷ 2 = 10

15 ÷ 2 = 7 R1

16 ÷ 2 = 8

10 x 7 x 8 = **560**

26. $\frac{1}{4} \times 2 \times 14 \times \frac{22}{7} = 22$ (2 Arcs)

10 – 7 = 3

22 + 3 + 3 + 14 = **42** (1M, 1A)

27. 56 + 4 = 60

60 ÷ 4 = **15** (1M, 1A)

28. 30 x 3 = 90 (Full marks)

90 – 54 = 36 (Total marks lost)

3 + 1 = 4 (Marks lost per wrong answer)

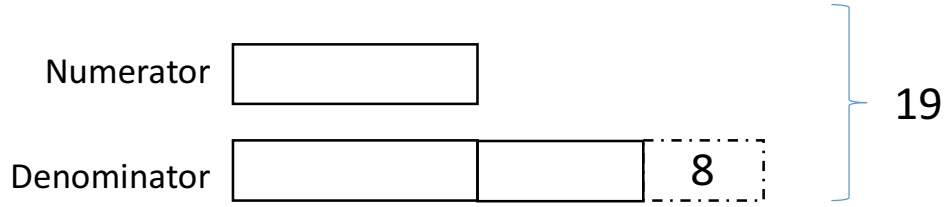
36 ÷ 4 = 9 (Wrong answers) (1M)

30 – 9 = **21** (1A)

29. 3.14 x 20 x 2 = 125.6 (1M)

125.6 + 10 + 10 = **145.6** (1A)

30.



3 units → 19 + 8 = 27

1 unit → 27 ÷ 3 = 9 (Numerator)

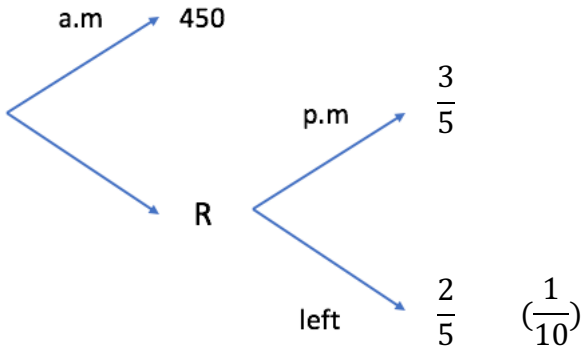
2 units → 9 x 2 = 18

18 – 8 = 10 (Denominator)

$\frac{\mathbf{9}}{\mathbf{10}}$

PAPER 2

1. 0.6 = $\frac{3}{5}$ 10% = $\frac{1}{10}$



R = $\frac{1}{10} \div \frac{2}{5} = \frac{1}{4}$

$1 - \frac{1}{4} = \frac{3}{4}$ (450 cupcakes)

$450 \div \frac{3}{4} = \mathbf{600}$ (1M, 1A)

2. 65 x 3 = 195

195 ÷ 75 = $2\frac{3}{5}$

$2\frac{3}{5}$ h = 2h 36 min (1M)

2h 36 min before 1630 is **1354** (1A)

3. ∠ACB = ∠ OBC = 55° (Isosceles Triangle)

∠ AOB = 55 + 55 = **110°** (Exterior angle of a triangle) (1M, 1A)

4. 31 + 19 = 50 (B + D)

A + C = B + D

50 – 22 = 28 (A) (1M)

50 x 2 = 100 (Total)

$\frac{28}{100} =$ **28%** (1A)

5. 1 C = 3 S

6 C = 3 S x 6

6 C = 18 S

14 S + 18 S = 32 S ($\frac{1}{4}$ of money)

32 S x 4 = 128 S

$\frac{5}{6} \times \frac{3}{4} = \frac{5}{8}$

$\frac{5}{8} \times 128$ = 80 (Additional stickers) (1M)

80 + 14 = **94** (1A)

6. Before

F : M

5_{x3} : 3_{x3}

15 : 9

After

F : M

11 : 9

15 units – 11 units = 4 units → 16

1 unit → 16 ÷ 4 = 4 (1M)

11 units + 9 units = 20 units → 4 x 20 = **80** (1M, 1A)

7. 100 + 20 = 120 (July)

$\frac{30}{100} \times 120 = 36$ (Decrease in Aug)

120 – 36 = 84 (Aug)

100 units – 84 units = 16 units → 8000

1 unit → 8000 ÷ 16 = 500 (1M)

100 units + 120 units + 84 units = 304 units → 500 x 304 = **152 000** (1M, 1A)

8. 0.20 x 19 = 3.80

15 – 3.80 = 11.20 (1M)

0.50 + 0.20 = 0.70

11.20 ÷ 0.70 = **16** (1M, 1A)

9. Before

C : A

1_{x6} : 5_{x6}

6 : 30

After

C : A

4 : 15

$\frac{50}{100} \times 30 = 15$

$\frac{1}{3} \times 6 = 2$

15 units – 4 units = 11 units → 286 (1M)

1 unit → 286 ÷ 11 = 26 (1M)

15 units – 2 units = 13 units → 26 x 13 = **338** (1A)

10. $20 \div \frac{2}{3} = 30$ (Height of tank) (1M)

30 – 1.5 = 28.5 (Final water level)

28.5 – 20 = 8.5 (Change in water level) (1M)

20 x 16 x 8.5 = **2720** (1A)

11. Since value is the same, ratio of number of $0.20 coins : $0.50 coins is 5 : 2

Before

$0.20 : $0.50

5 : 2

After

$0.20 : $0.50

10 : 8

0.20 x 10 = 2

0.50 x 8 = 4

4 – 2 = 2

40 ÷ 2 = 20 (Number of sets) (1M)

4 + 2 = 6 (Sum per set) (1M)

20 x 6 = **120** (1M, 1A)

12. $\frac{25}{100} \times 40 = 10$ (Girls)

60% - 10% = 50% (150)

$\frac{150}{50} \times 100 = 300$ (Total) (1M)

Before

A : C

3_{x5} : 2_{x5}

15 : 10

After

A : C

5_{x3} : 8_{x3}

15 : 24

15 units + 10 units = 25 units → 300

1 unit → 300 ÷ 25 = 12 (1M)

14 units → 12 x 14 = **168** (1M, 1A)

13. 30 ÷ 2 = 15 (Length of outer square) (1M)

15 x 15 = 225 (Total Area) (1M)

225 + 17 = 242

242 ÷ 2 = 121 (Area of shaded square) (1M)

$\sqrt{121} = \mathbf{11}$ (1A)

14. 2219 – 259 = 1960

1960 ÷ 2 = 980 (Cost of all T-shirts)

980 + 259 = 1239 (Cost of all Shorts)

980 ÷ 2 = 490 (Cost of 1 unit of T-Shirts) (1M)

1239 ÷ 3 = 413 (Cost of 1 unit of Shorts) (1M)

490 – 413 = 77 (Difference in cost of 1 unit of T-shirts and Shorts)

77 ÷ 5.50 = 14 (Number of items in 1 unit) (1M)

413 ÷ 14 = **29.50** (1A)

15. Case 1

I : M	Total
3 : 5	8

Case 2

I : M	Total
1_{x2} : 3_{x2}	4_{x2}
2 : 6	

2 units – 1unit = 1 unit → 70 – 20 = 50 (1M)

3 units → 50 x 3 = 150 (1M)

5 units → 50 x 5 = 250

150 + 20 = **170 (Isa)** (1A)

250 – 20 = **230 (Maryam)** (1A)

16. $\frac{20}{100} \times 3 = 0.6$ (A Shaded)

$\frac{20}{100} \times 5 = 1$ (C shaded)

1 + 0.6 = 1.6 (B shaded)

0.6 + 1 + 1.6 = 3.2 (Total Shaded) (1M)

3 + 4 + 5 = 12 (Total)

12 – 3.2 = 8.8 (Total Unshaded) (1M)

Shaded : Unshaded

3.2 : 8.8 (1M)

= 32 : 88

= 4 : 11 (2A)

17. LCM of 12 and 10 = 60

60 ÷ 12 = 5

60 ÷ 10 = 6

22 x 5 = 110 (cost of 5 boxes of choc)

25 x 6 = 150 (cost of 6 boxes of butter)

110 + 150 = 260 (Total cost in 1 set) (2M)

1560 ÷ 260 = 6 (Number of sets) (1M)

6 x 5 = **30 (Choc)** (1A)

6 x 6 = **36 (Butter)** (1A)

18. $72 \times \frac{40}{60} = 48$ (1M)

a) $48 \div \frac{1}{4} = \mathbf{192}$ (1A)

$\frac{3}{4} \times 192 = 144$ (D_2)

$144 \div 80 = 1\frac{4}{5}$ (T_2)

$\frac{2}{3} + \frac{1}{3} + 1\frac{4}{5} = 2\frac{4}{5}$ (T_t) (1M)

$2\frac{4}{5}$ h = 2h 48 min

b) 2h 48 min before 3.45 p.m is **12.52 p.m** (1M, 1A)