MATHEMATICS 2010 - PRIMARY SCHOOL LEAVING EXAMINATION

Prepared for: Maktaba by TETEA

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1. $7928 + 5073 = 13001$ ***Answer***
2. $15816 - 6253 = 9563$ ***Answer***
3. $38 \times 54 = 2052$ ***Answer***
4. $1207 \div 17 = 71$ ***Answer***
5. $\frac{3}{17} + 1\frac{5}{9} = 1\frac{112}{153}$ ***Answer***
6. $7\frac{2}{3} - 2\frac{3}{8} = 5\frac{7}{24}$ ***Answer***
7. $3\frac{5}{7} \times 2\frac{1}{5} = 8\frac{6}{35}$ ***Answer***
8. $5\frac{3}{7} \div \frac{2}{12} = 32\frac{4}{7}$ ***Answer***
9. $3.87 + 1.951 + 0.2 = 6.021$ ***Answer***
10. $0.3333 - 0.1667 = 0.1666$ ***Answer***
11. $9.05 \times 8.17 = 73.9385$ ***Answer***
12. $2.042 \div 10.21 = 0.2$ ***Answer***
13. $\frac{0.64}{100} = \frac{64}{100} = \frac{16}{25}$ ***Answer***
14. $13\frac{4}{5}$ into decimal, $13\frac{4}{5} = \frac{69}{5} = 13.8$ ***Answer***
15. $5\frac{1}{20} = \frac{101}{20} \times 100\% = 505\%$ ***Answer***
16. Time between is 18 hours 50 minutes, convert hours into minutes: $18 \times 60 = 1080$ minutes.
    Total minutes: $50 + 1080 = 1130$ minutes ***Answer***
17. Square root of $5\frac{1}{3} = \sqrt{\frac{16}{3}} = \frac{\sqrt{16}}{\sqrt{3}} = \frac{4}{\sqrt{3}}$ ***Answer***
18. Kg gram
    6 50
    X 26
    $6 \times 26 = 156$ kg
    $50 \times 26 = 1300$ g $= 1$ kg 300 g
    157 kg 300 g ***Answer***

19. L.C.M of 36 and 90

2	36	90
2	18	45
3	9	–
3	3	15
5	1	5
	–	1

LCM $= 2^2 \times 3^2 \times 5 = 180$ ***Answer***

20. HCF of 48 and 60

2	48	60
2	24	30
3	12	15
	4	5

HCF $= 2^2 \times 3 = 12$ ***Answer***

21. Odd numbers divisible by 3, are 3, 9, 15, 21, and 27

22. $3, 2, 0, -3, -7, -12$ ***Answer***

23. $\frac{4}{5a} + \frac{3a}{b} = \frac{4}{5\left(\frac{1}{2}\right)} + \frac{3\left(\frac{1}{2}\right)}{\frac{5}{3}} = \frac{4}{\frac{5}{2}} + \frac{\frac{3}{2}}{\frac{5}{3}} = 4 \cdot \frac{2}{5} + \frac{3}{2} \cdot \frac{3}{5} = \frac{8}{5} + \frac{9}{10} = \frac{25}{10} = \frac{5}{2} = 2\frac{1}{2}$
Answer

24. $\frac{10}{x} + \frac{1}{2} = 3, \frac{10}{x} = 3 - \frac{1}{2}, \frac{10}{x} = \frac{5}{2}, 5x = 20, x = 4$ ***Answer***

25. $\frac{4}{B} = \frac{2}{5}, B = 10$ ***Answer***

26. $\frac{yx - xy^2}{y - y^2} = \frac{xy(1-y)}{y(1-y)} = x$ ***Answer***

27. Circumference $C = \pi d$
$7.85 = 3.14d$
$d = 2.5$ m ***Answer***

28. $2x + 7x = 180°$, so $9x = 180°$ and $x = 20°$ ***Answer***

29. Average: $\frac{20+21+13+27+39+y}{6} = 21$
$20 + 21 + 13 + 27 + 39 + y = 126$
$120 + y = 126$, so $y = 6$ ***Answer***

30. Speed = distance/time
$100,000 = \frac{75,000}{t}$
$100,000t = 75,000$, so $t = \frac{75,000}{100,000} = \frac{3}{4}$ hour = $\frac{3}{4} \cdot 60 = 45$ minutes ***Answer***

31. $m\angle XYZ = 180 - (70 + 70) = 40°$ ***Answer***

32. ***This diagram is impossible! No answer can be obtained.***
If you were to consider the two shaded triangles separately:
Area of left triangle $= \frac{1}{2} \cdot 9 \cdot 10 = 45$ m²
Area of top triangle $= \frac{1}{2} \cdot 5 \cdot 14 = 35$ m²
Total: 80 m²
But if you take the area of the large triangle and subtract the area of the rectangle:
$A = \frac{1}{2} \cdot 14 \cdot 24 = 168$ m²
Area of rectangle $= 10 \times 5 = 50$ m²
Shaded area $= 168 - 50 = 118$ m², which is a different answer!
The problem is that all three triangles would need to be similar for the diagram to be possible, but they are not.

33. Area of closed cylinder $= \pi dh + 2\pi r^2$
$= 3.14 \cdot 5 \cdot 20 + 2 \cdot 3.14 \cdot (2.5)^2$
$= 314 + 2 \cdot 3.14 \cdot 6.25 = 314 + 39.25 = 353.25$ m² ***Answer***

34. Volume of pipe $V = \pi r^2 h$
$8624 = \frac{22}{7} \cdot r^2 \cdot 14$
$196 = r^2$
$r = 14$ cm ***Answer***

35. $DCVI = 500 + 100 + 5 + 1 = 606$ ***Answer***

36. $180(n - 2) = 180(5 - 2) = 180 \cdot 3 = 540°$ ***Answer***

37. Area = base × height
$150 = b \times 30$
$b = 5$ cm ***Answer***
Note: the exam gave the incorrect units for area. The given information should have been written $150cm^2$ *rather than* $150cm^3$

38. Volume of cubic tank = length × length × length
$V = 150 \times 150 \times 150 = 3,375,000$cm³ $= \frac{3,375,000}{1,000} = 3375$L ***Answer***

39. $(4x + 40) + x + (3x + 20) + (3x + 6) + 19 = 360°$

$11x + 85 = 360$

$11x + 85 = 275$

$x = 25°$ ***Answer***

40. Area of rectangle = length × width
    $240 = 15 \times w$
    $w = 16$
    $w^2 = 16^2$
    Square of width: 256cm^2
    Square = $16^2 = 256\text{cm}^2$ ***Answer***

41. Area of the two triangular bases: $2\left(\frac{1}{2} \times 4 \times 3\right) = 2(6) = 12$

    Area of three rectangular faces: $5 \times 20 + 3 \times 20 + 4 \times 20 = 100 + 60 + 80 = 240$

    Total Surface Area $= 12 + 240 = 252\ \text{m}^2$ ***Answer***

42. Area $= \frac{1}{2} \times (31 - 9) \times 7 + 9 \times 7 + \frac{1}{2} \times 8 \times (7 - 4) = \frac{1}{2} \times 22 \times 7 + 63 + 4 \times 3$
    Area $= 11 \times 7 + 63 + 12 = 77 + 75 = 152$
    Area $= 152\ \text{cm}^2$ ***Answer***

43. Simple Interest = Principal × $\frac{Rate}{100}$ × Time
    Interest $= 300000 \times \frac{9.5}{100} \times 3 = 3000 \times 28.5 = 85,500$
    Interest is TSh. $85,500$/- ***Answer***

44. $17 - 12 = 5$, but 17 means it will be p.m.

    5: 18pm ***Answer***

45. First, find the fraction represented by Fare

    Fare $= 1 - \left(\frac{1}{5} + \frac{2}{5} + \frac{1}{4}\right) = 1 - \left(\frac{3}{5} + \frac{1}{4}\right) = 1 - \left(\frac{12}{20} + \frac{5}{20}\right) = 1 - \frac{17}{20} = \frac{3}{20}$

    Angle for Fare $= \frac{3}{20} \times 360° = 3 \times 18° = 54°$ ***Answer***

46. $A(-3, 1)$ ***Answer***

47. Profit = Sale Price − Purchase Price
    Profit $= 40,000 - 25,000 = 15,000$
    The percent is calculated based on the purchase price: Percent Profit $= \frac{Profit}{Purchase\ Price} \times 100$
    Percent Profit $= \frac{15,000}{25,000} \times 100\% = \frac{3}{5} \times 100\%$
    Percent Profit $= 60\%$ ***Answer***

48. Let number be x,
    $\frac{x}{4} = x - 9$
    $x = 4x - 36$
    $36 = 3x$
    $x = 12$
    The number is 12 ***Answer***

49. Cost of first ten words $= 10 \times 100 =$ TSh 1000

    Money remaining $= 1750 - 1000 = 750$

    Extra Words $750 = 150 \times x$

    $x = 5$
    Total words $= 10 + 5 = 15$ words ***Answer***

50. Pencils: $12 \times 200 = 2,400$
    Books: $8 \times 250 = 2,000$
    Exercise books: $20 \times 300 = 6,000$
    Rulers: $15 \times 50 = 750$
    Total Cost $= 2,400 + 2,000 + 6,000 + 750 = 11,150$
    Amount Paid $= 11,150 - 2,150 = 9,000$
    Maimuna paid Shs. $9,000$ ***Answer***