**COMPETENCE BASED CURRICULUM**

**JUNIOR SCHOOL**

**GRADE 8**

**FORMATIVE ASSESSMENT**

**MATHEMATICS**

### MARKING SCHEME

|  |  |  |  |
| --- | --- | --- | --- |
| No. |  Working | Marks |  |
| 1. | 1044 + 1006×180 1006×180=1810801044+181080= 182,124  |  M1 M1, Ans 1  | Long method only |
| 2. | Let the number be xLCM=product of the number GCD of the number140 = 20×x 20X = 140×7 20X = 49 | M1M1A1 | Mark alternative method. |
| 3. | X2 + x = x(x+1)X2-1= (x+1) (x-1)X2-x =x(x-1)X(x+1) (x-1)X3-x | M1M1A1 |  |
| 4. | -4+108-2456÷7×2-4+108-24 1680/16 = 5 | M1M1A1 | NumeratorDenominatorAccuracy |
| 5. | 3/8 ( 38/5 - 55/36 × 12/5)3/8 × 59/40 = 119/40 | M1M1, A1 |  |
| 6. | 8+(-4) + -22 -24 334/-24 – 22/33 = -1/6 – 2/3-3 – 12 = -15/18 =-5/8 18 | M1M1M1A1 |  |
| 7. | L.C.M of 30, 36, and 45

|  |  |  |  |
| --- | --- | --- | --- |
|  | 30 | 36 | 45 |
| 2 | 15 | 18 | 45 |
| 2 | 15 | 9 | 45 |
| 3 | 5 | 3 | 15 |
| 3 | 5 | 1 | 5 |
| 5 | 1 | 1 | 1 |

L.C.M = 22×32×5 = 180M=180+7=187 | M 1M 1A 1 |  |
| 8. | 36, 192, 120, 744, and 9564 | 3mks1 mk0 mk | All listedWhen 2 numbers wrongMore than 2 numbers wrong |
| 9. | 8+6+4+9=272+0+x27-(2+x)=1127-2-x=11X=27-2-11X=27-13=1414 can not be the answer,27-(2+x)= 2227-2-x=22X=27-2-22X=27-24X=3 | M 1M 1A 1 | But only one digit needed |
| 10. | 4×(-2)×(-6)  4=12 | M 1A  1 |  |
| 11. |  -2  -9-8-7-6-5-4-3-2-10 +6(-7) + (-2) +(+6) = =-3 |  |  |
| 12. | R=3.25610r=32.5656….1000r=3256.565656…..990r=3256.5656….* 32.5656….

 3224.0000….R=3224/990 | M 1M 1A 1 |  |
| 13. | 9/5 × 33/4 = 297/20297/20 – 5= 1417/20 - 5= 917/20 | M 1M 1A 1 |  |
| 14 | 10/21 + (-1/18) ÷ 7/1810/21 + (-1/18 ×18/7) = 10/21 – 1/710/21 – 3/21= 7/21 = 1/3 |  M 1M 1A 1 |  |
| 15. |   2km 1/3×2= 2/3Distance from k= 2-2/3= 11/3 | M 1M 1A 1  |  |
| 16. | L.C.M of 60 and 42

|  |  |  |
| --- | --- | --- |
|  | 60 | 42 |
| 2 | 30 | 21 |
| 2 | 15 | 21 |
| 3 | 5 | 7 |
| 5 | 1 | 7 |
| 7 | 1 | 1 |

L.C.M = 22×3×5×7  =420Area = 4.2×4.2 =17.64M2  | M 1M 1A 1 |  |
| 17. | a) Let his salary be sh. X  School fees 1/4xRemaining 3/4xElectricity and water bills 1/4x × 3/4x = 3/16x Remaining 3/4x – 3/16x =9/16x Transport 1/9×9/16x = 1/16x Remaining = 9/16x – 1/16x = 8/16x = 1/2x  1/2x=3,400 X = 3,400×2 =6,800 | M 1M 1M 1M 1A 1 |  |
|  | b) School fees = 1/4×6,800 =sh. 1,700 | A 1 |  |
|  | c) Transport = 1/16x x  1/16×6,800 Sh. 425 | A 2 |  |
|  | d) Electricity and water bills 3/16x = 3/16×6,800 Sh. 1,275 | A 2 |  |
| 18 | Let B be the beginning and E stand for end of theB 23p 20p 26 1st 2nd E stop stop1st 23-23 = 119+11= 202nd stop 9-6= 3 20-6= 14 Final destination 14 + 12= 26 Passangers | M 1M 1A 1 |  |
|  | b) 23+9+12=44 Passangers | M 1A 1 |  |
|  | c)12×50 = sh. 600 11×85= sh.935 6×20 = sh.120 3×35 = sh.105 12×15 = sh. 180 Sh. 1,940 |  M 1M 2A 1 |  |
| 19. | a) i) 2+6-\*=0 \*=8 ii)8+7-\*+1 = 11 14-\* = 11 \*=14-11= 3 iii) 8+9+9-\*+1 = 22 26-\*-1 = 22 \*= 25-22 = 3 | M 1M 1A 1 |  |
|  | b) i) 3+9+6+\*+5 23+\* sum divisible by 9 23+\* = 27 \* = 27-23 = 4 ii)4+8+6+7+5+\*30+\* = 36 \*36-30 = 6  iii)3+4+9+\*+\* 16+\*+\* = 18 \*+\* = 18-16 =2 \* \* 2 0 0 2 MaRK FOR OTHERS THAT ARE CORRECT | M 1A 1 |  |
| C) |  i) 3+\*+7 = 12 \*= 2 ii) \* 1  iii) \* 0 Mark for other values that are correct | M 1A 1 |  |
| d) | i) \*= 2ii) \* =3 NB: There could be other numbersiii \* = 0 | M 1A 1 |  |
| 20. |  L.C.M of 324 and 220a)

|  |  |  |
| --- | --- | --- |
|  | 324 | 220 |
| 2 | 162 | 110 |
| 2 | 81 | 55 |
| 3 | 27 | 55 |
| 3 | 9 | 55 |
| 3 | 3 | 55 |
| 3 | 1 | 55 |
| 5 | 1 | 11 |
| 11 | 1 | 1 |

LCM = 22×34×5×11 = 17, 820 | M 1A 1 |  |
|  | b) i) son 17820/324 = 55 items ii) daughter 17820/220 = 81 items | A 2A 2 |  |
| 21. | 2010 = 750 =100%2011 (100-30)% of 750 bags-B 1 70/100×750 =525 Bags- B 12012 115/100×525 603.75 Bags- Bags2010 750 × 55= 41250kg 1 ton= 1000kg 41250kg 41250/1000 = 41.25 tonnes – M 1 1 tonne = 7900 41.25 tonne = ? 7900×41.25 = sh. 325875 – B 12011 525×55 × 110/100×7900 1000 = sh. 250923.75 – M 1 2012 603.75/1000×55 B 1 110/100×8690 = sh. 317418Total 325875.00 M 1 250923.75 317418.54 894217.29 A 1 |  |  |
| 22. | a) x = GCD ×LCM # given  = 26×1092182= 156Or: GCD = 26 =2×13LCM =1096 = 22×3×7×13 182= 2×7×13Comparing factors of GCD and LCM and 182 X= 22×3×13 = 156NB: For LCM; Common factors with lowest power GCD common factors with lowest power | M 1A 2 |  |
|  | b) Muigai = sh p Nzau = sh 4p  Muli = sh. 2p1. Total = p+4p+2p = 7p
2. P= sh 1500

Muigai 1500Nzau 6000Muli 3000 total Sh. 10500 | M 1M 1M1 A 1 |  |
|  | c) w = 35° - vertically opposite angles are equal x= 35° - corresponding angles y= (180-35)° = 145° Supplementally angles Z = 145° Corresponding angles sum is equal to 180° | A 1A 1A 1A 1 |  |
| 23. | a) 2340 + 3455 + 675 + 960 + 1350 = 8780 | A 2 |  |
|  | b) i) lost job 2340/5 + 3455/5468 + 691 = 1159 | M 1M 1A 1  |  |
|  | 1. Got jobs

675/3 + 960/3 + 1350/3225 + 320 450 = 995 ×2 =1990 | M 1 M 1A 1 |  |
|  | c) 8780 + 1990 – 1159 = 9,611  | M 1A 1 |  |
| 24. | a)

|  |  |  |
| --- | --- | --- |
| Mass | Frequency | fx |
| 90 | 2 | 180 |
| 91 | 1 | 91 |
| 94 | 3 | 282 |
| 96 | 2 | 192 |
| 98 | 2 | 196 |
| 99 | 4 | 396 |
| 102 | 3 | 306 |
| 105 | 3 | 315 |

 20 19581. Mode=94 Number repeated

 many times1. Mean 1958/20
2. =97.9
 | A 1A 1A 1 |  |
|  | b) Thusday bought = 1948 Sold = 750 Balance = 1,198 Friday; sold 240 + 750 = 990 Balance = 1,198-990 = 208 Saturday; Bought 560Total on sat 560 + 208 =768 Money = 768 ×8 = Ksh. 6144 | M 1M 1M 1M 1 A 1 |  |