**FORM 2 MATHS**

**MARKING SCHEME**

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| 1. a) BODMAS

Numerator:= 80+10$÷-5×6$= 80-2 $×$ 6=80-12=68 **✓M1**Denominator=6$×$ 9-2+12=54-2+12=64**✓M2**=$\frac{68}{64}=1\frac{1}{16} or \frac{17}{16}$**✓Ans** | 2. Numerator0.24+0.243=0.483**✓M1**Denominator0.08$÷$ 0.4=0.2**✓M2**=$\frac{0.483}{0.2}$=2.415**✓Ans** |
| 1. a)

 2 36 54 3 18 27 3 6 9 2 32$×$3$×$3=18**✓Ans** | b) The other number =$\frac{G.C.D × L.C.M}{Given number}$ = $\frac{6×216}{36}$ **✓M1** =36**✓Ans** **‘or’**  $\frac{6×216}{54}$ **✓M1** =24**✓Ans** |
| a) $\frac{3\left(3x+4\right)+6\left(x+1\right)-4\left(2x+8\right)}{12}$**✓M1**1. $\frac{9x+12+6x+6-8x-32}{12}$ **✓M2**

 $\frac{7x-14}{12}$ | b) 2x+8=14**✓M1**2x=14-82x=6X=3**✓Ans** |
| 1. C:\Users\USER\Pictures\2019-06-03\001.jpg
 |  |
| 1. Length of an arc =$\frac{θ}{360} 2πr$

88 cm=$\frac{144}{360}$ $×2×\frac{22}{7}×r$**✓M1**88$×10=\frac{88}{7}r$r=$\frac{880×7}{88}$ **✓M2**r =70cm ✓**Ans** | 1. Men length days

4 32 128 ? 8Ratio of men; 8: 4= 2: 1**✓M1**Ratio of days 8 : 12=2:3**✓M1**Length of the wall= $\frac{2}{1}×\frac{2}{3}×32$ =$\frac{128}{3}=42.67$**✓Ans** |
| 1. 80% =960

100 $\frac{100×960}{80}=1200$**✓M1** $1500-1200=300$**✓M2** $\frac{300}{1200}×100=25\%$**✓Ans** | 1. Bread =$\frac{2}{5}$

 $\frac{5}{5}-\frac{2}{5}=\frac{3}{5}$**✓M1**Stationery =$\frac{1}{6}of \frac{3}{5}=\frac{1}{10}$**✓M2**$$\frac{2}{5}+\frac{1}{10}=\frac{1}{2}$$$\frac{1}{2}$=200$\frac{2×200}{1}$=400**✓Ans** |
| 1. 1 US dollar=90.45

7500$\frac{7500×90.45}{1}$=678,375**✓M1**678,375-638,676=39,699 **✓M2**1 sterling pound=132.33 =39699$\frac{39699}{132.33}$=300 sterling pound**✓Ans** | 1. a: b =a:b:c

5(2:3)=10:15**✓M1** b:c3(5:9)=15:27a:c=10:27**✓Ans** |
| 1. Let r=0.4074………(i)

10r=4.0740……….(ii)100 r =40.7407……(iii) **✓M1**1000r=407.4074……(iv)1000r=407.4074- r=0.4074 **✓M2**99r=407R=$\frac{407}{999}=\frac{11}{27}$**✓Ans** | 1. Time used=45$×$ 2=90mins

Break=15minsExtra=15 minsPenalties=15mins90+15+15+15=135mins**✓M1**1hr=60min 135$\frac{135×1}{60}$=2.15min**✓M1**+ $11:50$ 2:1514.05 or 2.05pm**✓Ans** |
| 1. Bh=36$cm^{2}$

 4b=36**✓M1** B=9cm **M2✓** P=6+9+6+9=30cm**✓ Ans** | 1. Now future

Man=3x 3x+5Son=x x+53x+5+x+5=74**✓M1**4x+10=744x=64**✓M2**X=16yrsSon= 16yrsMan=48yrs **✓Ans** |
| 1. $\left(7.21×10^{-1}\right)^{2}+\sqrt{16.24×10^{2}}$

$51.$98$×10^{-2}$+4.0298$×10^{1}$**✓M1** $=0.5198+40.298$**✓M2** $=40.8178$**✓Ans** | 1. a) 20% of the profit =running the business

$\frac{20}{100}×$ 43200**✓M1** $=Kshs 8,640$**✓Ans** |
| 17.b) 15% of profit=shared equally$\frac{15}{100}×43200=6,480$**✓M1**Mue $\frac{6480}{2}$ =3240**✓M2**43200-8640-6480=28080**✓M3**28,080=shared as per the ratio of contributionRatio= Korir : Mue 40,0000 : 64,000 5 : 8Mue $\frac{8}{13}×$28,080=17,280**✓M4**3240+17280=20,520**✓Ans** | 17.c)Kori received $\frac{5}{13}×$28,080 =10,80010800+3240=14040**✓M1**1cow=1800 14040 $\frac{1×14040}{1800}$**✓M2**=7.87 cows**✓Ans** |
| 1. a) volume=L$×W×H$

 =36$×25×9$=8100$m^{3}$**✓M1**$\frac{1}{2}×\frac{22}{7}×7×7×36=2772m^{3}$**✓M2**$volume of concerete=8100-2772$**✓M3** =$5328m^{3}$**✓Ans** | 18.b) Density=$\frac{mass}{volume}$ Mass=density$×$ volume=1500$×$5328=7,992,000kg**✓M1**Ratio 1:4:4Mass of cement=$\frac{1}{9}×$ 7,992,000 =888,000kg**✓A1**Mass of sand=$\frac{4}{9}×$ 7,992,000 =3,552,000kg**✓A2**Mass of ballast= $\frac{4}{9}×$7992000 =3,552,000kg**✓A3** |
| 18c) 10,000=$111m^{3}$ =$5328m^{3}$ $\frac{10,000×5328}{111}$**✓M1**=Ksh 480,000**✓Ans** | 19.a) 1930h -1230**✓M1** 700=7hrs**✓Ans** |
| 19b) arrival=1455hDeparture=1830 1830* 1455

3.35**✓M1**=3hrs 35mins**✓Ans** | 19d) station y 1445 - 1350 00.55**✓M1** =55mins Station n 1830 -1455 3 hr 35min Station y**✓Ans** |
| 1. e) average speed=$\frac{Distance}{Time}$

=$\frac{420}{7}$**✓M1**=60km/h**✓Ans** | 20.a) let b be bull Let g be goat5b+30g=1170004b+25g=94,750**✓M1**4(5b+30g=117,0005(4b+25g=94750)=20b+120g=468,000**✓M2**20b+125g=473750 -1. - 5g=-5750

g=1150**✓A1**5b=82500b=16,500**✓A2** |
| 1. b) abdul :

40% profit per bull30% profit per goat$\frac{40}{100}×$16500 $=6600$16500+6600=23,100**✓M1** $\frac{30}{100}×1150=345$$1150+345=1495 per goat$**✓M2**Abdul had 5 bulls and 30 goats(5$× $231000+(1495$×$ 30)=115,500+44850=160,350**✓M3**Ali 50% profit per bull40% profit per goat$\frac{50}{100}×16500$=8250 $16500+8250=24,750$ $\frac{40}{100}×1150=460$ $460+1150=1610$**✓M4**Ali had 4 bulls and 30 goats(4$×$ 24750)+(25$×$1610)99000+40250=139,250Abdul =160,350-117000=43350Ali=139-94750=44500**✓M5**Hs Ali**✓Ans** | 1. a)(i) $\frac{1}{2}×\frac{22}{7}×140=220m$**✓M1**

220+200+220+200=840m**✓Ans**(ii) 200$×140=28000m^{2}$ $\frac{22}{7}×70×70=15400m^{2}$**✓M1**28000-15400=12600$m^{2}$1ha=10,000$m^{2}$ 12600$m^{2}$**✓M2** $\frac{12600×1}{10000}$=1.26ha**✓Ans**b(i) 1ha =5,000,000  1.26ha1.26$×$5000000**✓M1**=6,300,000 shillings**✓Ans**B(ii) 14,760,000-6,300,000=8,460,000**✓M1** $\frac{8,460,000}{6,300,000}×100$**✓M2**134.28=134.3%**✓Ans** |