Sample Mark Scheme: P000292

NCFE Functional Skills Qualification in Mathematics at Level 2 (501/2324/5)

Activity 1		Marks
1A	**8.05 (km)**	**4**
	10 (sides of squares) x 0.5 (miles) or evidence of	1
	5 (miles) **Follow through (FT)** their sides x 0.5	1
	5/0.6214 OR 5 x 1.6093 (allow 5 x 1.609) OR evidence of (for example: 8.045, 8.046, 8.047 seen) FT their 5	1
	Correct answer only (CAO) 8.05 (km) must be shown to 2 decimal places	1
1B	**1.8 (km)**	**2**
	1800 / 1000	1
	CAO 1.8 (km)	1
1C	**197.82, 197.8 or 198 (ml)**	**4**
	Radius identified as 3 (cm) or attempt, for example: 6 / 2 (=3) or evidence of	1
	3 x 3 or 9 seen	1

Activity 1		Marks
	3.14 x 9 x 7 OR 3.14 x 3 x 3 x 7 or evidence of (accept π but if 3^2 seen there must be evidence of 3 x 3 or 9)	1
	197.82, 197.8 or 198 (ml). Accept accurate answer if π to 3 or more decimal places is used	1
	Total marks	**10**

Activity 2		Marks
2A	**4/5**	**3**
	640/800 or equivalent, for example: 64/80, 0.8 or 80 (%)	1
	640/800 simplified to at least 16/20	1
	CAO 4/5	1
2B	**82 (%)**	**3**
	53000 OR 65000-12000 seen. Accept alternative method: 12000/65000*100 (=18.46%)	1
	53000/65000 *100 or evidence of. Accept alternative method: 100-18.46 (=81.54%). FT their/65000 only if subtraction of 12000 attempted.	1
	CAO 82 (%)	1
2C1	**11, 11.1 or 11.11 (%)**	**2**
	1/9 x 100 OR 100/9 OR (800/9)/800*100 or evidence of	1
	11, 11.1 or 11.11 (%)	1

Activity 2		Marks
2C2	**0.15, 15%, 3/20**	**2**
	120/800 seen or equivalent, for example: 12/80	1
	CAO 0.15, 15%, 3/20, 3 in 20	1
2C3	**1:5**	**2**
	160:800 or equivalent, for example: 16:80 (accept 800:160, 800/160 = 5, 1/5, or 5:1 for 1 mark)	1
	CAO 1:5	1
2D	**725 with valid check**	**4**
	595 x 4 (= 2380)	1
	2380 – 1655 (= 725) OR 595 x 4 - (412 + 585 + 658) or evidence of	1
	CAO 725	1
	Check using reverse calculation, for example: 725 + 1655 = 2380, or 2380/4=595	1
	Total marks	**16**

Activity 3		Marks
3A	**Pie chart with sectors are at 288 degrees (Standard), 54 degrees (Elite), 18 degrees (Wheelchair), with labels or legend to identify.**	**4**

Activity 3		Marks
	Method shown for at least **2** sectors, for example: 640/800 x 360 (= 288) and 120/800 x 360 (= 54) OR 2 values from 80%, 15%, 5% OR 2 chart intervals identified from 1, 3 and 16 or evidence of	1
	CAO 288, 54 and 18 degrees. Can be found on chart if not in workings. Accept chart intervals calculated of 1, 3 and 16	1
	Pie chart with: Standard at 288 degrees (16 intervals), Elite at 54 degrees (3 intervals), and Wheelchair at 18 degrees (1 interval). FT their calculated angles. Tolerance is no greater than 9 degrees or 0.5 interval.	1
	Labels or legend to identify categories.	1
3B	**13 minutes and 33 seconds, or 813 seconds (units required) with a valid check**	**2**
	13 minutes and 33 seconds OR 813 seconds. Units required (accept in workings)	1
	Check using reverse calculation, for example: 13 (mins) and 33 (secs) + 19 (mins) and 17 (secs) = 32 (mins) and 50 (secs)	1
3C	**4.93 (metres per second) and a valid comment**	**5**
	4057 (seconds) OR (7 x 60) + (60 x 60) + 37 = (4057) OR 420 + 3600 + 37 = (4057) or evidence of	1
	20000 OR 20 X 1000	1
	20000/4057 or evidence of, for example, 4.929751 FT their seconds and metres values	1
	CAO 4.93 (m/s)	1
	Valid comment, for example, the competitor is close to the fastest competitor, the competitor is not as quick as the fastest yet, the competitor needs to improve. Accept that the difference (0.19 metres per second) is only very slight but do not accept just 'difference of 0.19') FT	1
3D1	**15 (m or metres)**	**2**

Activity 3		Marks
	25 and 10 identified	1
	CAO 15 (m or metres)	1
3D2	**CAO 12 (miles)**	**1**

Total marks	**14**

Overall marks	**40**
Pass mark:	**25**

Summary of Skills Standards and Coverage and Range

(Note: where task reference and marks are indicated against a skill standard they can be for any of the associated coverage and range statements)

Skills standards	Total Marks	Required Weighting	Actual Weighting	Coverage and range (can be covered across all skills standards)	Task reference	Marks awarded
Representing **R1** understand routine and non-routine problems in familiar and unfamiliar contexts and situations **R2** identify the situation or problems and identify the mathematical methods needed to solve them **R3** choose from a range of mathematics to find solutions	**13**	**30-40 %**	**32.5%**	**a.** understand and use positive and negative numbers of any size in practical contexts	**1A, 2D 3B, 3C**	**4**
				b. carry out calculations with numbers of any size in practical contexts, to a given number of decimal places		
				c. understand, use and calculate ratio and proportion, including problems involving scale	**1A, 2A, 2A, 2B, 2B, 2C1, 2C1, 2C3, 2C3**	**9**
				d. understand and use equivalencies between fractions, decimals and percentages		
				e. understand and use simple formulae and equations involving one or two step operations	**1A, 1C, 1C, 1C, 3C**	**5**
				f. recognise and use 2D representations of 3D objects		

Analysing **A1** apply a range of mathematics to find solutions **A2** use appropriate checking procedures and evaluate their effectiveness at each stage	**13**	**30-40%**	**32.5%**	**g.** find area, perimeter and volume of common shapes	**1A, 1B, 1B, 1C, 3C, 3C**	**6**
				h. use, convert and calculate using metric and, where appropriate, imperial measures		
				i. collect and represent discrete and continuous data, using ICT where appropriate	**2A, 2B, 3A, 3A, 3A, 3A, 3C, 3D1, 3D2**	**9**
				j. use and interpret statistical measures, tables and diagrams, for discrete and continuous data, using ICT where appropriate		
Interpreting **I1** interpret and communicate solutions to multistage practical problems in familiar and unfamiliar contexts and situations **I2** draw conclusions and provide mathematical justifications	**14**	**30-40%**	**35%**	**k.** use statistical methods to investigate situations	**2D, 2D, 2D, 3B, 3D1**	**5**
				l. use probability to assess the likelihood of an outcome	**2C2, 2C2**	**2**
Total marks	**40**					**40**

Question Type	
Open:	**38 (95%)**
Closed:	**2 (5%)**