N4 NUMERACY 1.1

This resource is to support pupils in passing the appropriate National 4 Assessment Standard. The questions and marking schemes used are from SQA past papers and as such test the topics in their entirety from grade A to C and *may* include other areas from the course. In addition the questions from **Paper 1** (P1) should be completed **without** the use of a calculator and questions from **Paper 2** (P2) permit the use of a calculator.

Each Assessment Standard is used to ensure pupils have the minimum competency on the specified sub-skills for the National 4 course. As such each Assessment Standard will test grade C work on that specific topic.

This resource is divided into two sections:

- Section A has an example on each sub skill for the relevant Assessment Standard and the marking scheme for these questions
- Section B has extra practice questions on this Assessment Standard and the marking scheme for these questions

Unit Assessment Standard	Sub skills	Section A – Question Number
Numeracy 1.1 Selecting and using appropriate numerical notation and units	Use appropriate **units** for: money time measurement on at least one occasion for each.	 Q1 Q2 Q3

FORMULAE LIST

Circumference of a circle: $C = \pi d$

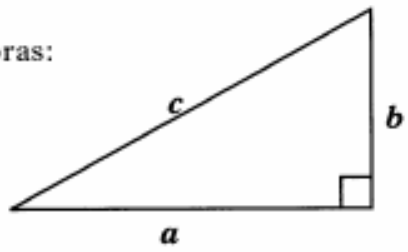
Area of a circle: $A = \pi r^2$

Curved surface area of a cylinder: $A = 2\pi rh$

Volume of a cylinder: $V = \pi r^2 h$

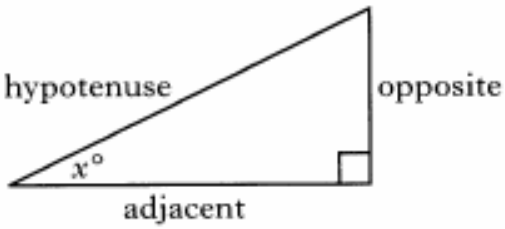
Volume of a triangular prism: $V = Ah$

Theorem of Pythagoras:



$$a^2 + b^2 = c^2$$

Trigonometric ratios in a right angled triangle:

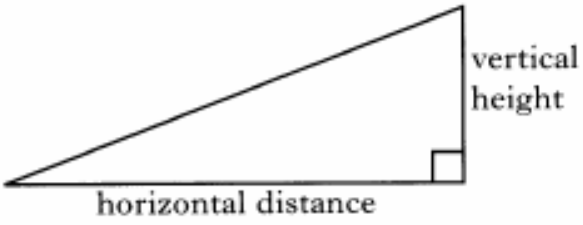


$$\tan x^\circ = \frac{\text{opposite}}{\text{adjacent}}$$

$$\sin x^\circ = \frac{\text{opposite}}{\text{hypotenuse}}$$

$$\cos x^\circ = \frac{\text{adjacent}}{\text{hypotenuse}}$$

Gradient:



$$\text{Gradient} = \frac{\text{vertical height}}{\text{horizontal distance}}$$

Section A

<table>
<tr><th>Q</th><th></th><th>Marks</th></tr>
<tr><td>Q1
P1</td><td>7. Rowan wants to buy 13 theatre tickets.
The price of one ticket is £12·50.
The theatre has a special online offer of four tickets for the price of three.
Rowan makes use of the special online offer.
How much does Rowan pay for the 13 theatre tickets?
  </td><td>3</td></tr>
<tr><td>Q2
P1</td><td>5. A new tram system is operating in Inverness.
The trams run between the four stations shown.
All trams have the same journey times.
 
Part of the timetable is shown below.
<table><tr><th>Station</th><th>Tram 1</th><th>Tram 2</th></tr><tr><td>Crown</td><td>0956</td><td>1002</td></tr><tr><td>Union</td><td>1011</td><td></td></tr><tr><td>Telford</td><td>1018</td><td></td></tr><tr><td>Ferry</td><td></td><td>1044</td></tr></table>Complete this timetable. 3</td><td>3</td></tr>
</table>

Q3 P1

6. (*a*) At 6.00 am the temperature in Edinburgh was −13 °C.

At 10.00 am the temperature was −5 °C.

By how many degrees had the temperature risen? **1**

(*b*) At 3.00 pm the temperature had risen a further 7 degrees.

What was the temperature at 3.00 pm? **1**

Section A

MARKING SCHEME

Section A - Marking Scheme

<table>
<tr><th>Q</th><th>PLEASE NOTE – it is the use of UNITS in these questions that will gain the Assessment Standard
(at least one occasion for each topic – money, time and measurement)</th><th>Marks</th></tr>
<tr><td>Q1</td><td>
<table>
<tr><th>Question No</th><th>Give 1 mark for each •</th><th>Illustrations of evidence for awarding each mark</th></tr>
<tr><td>7</td><td>Ans: (£)125
•1 strategy for groups of four
•2 knowing to find the cost of groups of four
•3 total cost and all calculations correct</td><td>•1 3 × 3 + 1
•2 3 × 37·50
•3 112·50 + 12·50 = (£)125
3R</td></tr>
<tr><td colspan="3">NOTES:
(i) Alternative Strategies
•1 strategy for groups of four — •1 3 × 3 + 1
•2 knowing to multiply — •2 10 × 12·50
•3 all calculations correct — •3 (£)125·00

•1 find cost of 13 tickets — •1 13 × 12·50
•2 strategy — •2 13 × 12·50 – (3 × 12·50)
•3 all calculations correct — •3 (£)125·00

(ii) The third mark can only be awarded to candidates who perform at least two calculations

(iii) For a correct final answer without working award 2/3</td></tr>
</table>
</td><td>3</td></tr>
<tr><td>Q2</td><td>
<table>
<tr><td>5</td><td></td><td></td><td>Ans: 1017, 1024, 1038
•1 correct time at Union
•2 correct time at Telford
•3 correct time at Ferry</td><td>3

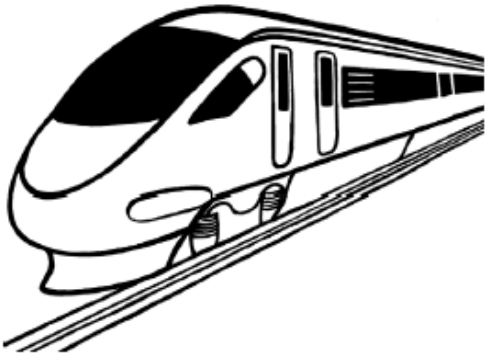
(RE)</td><td>
•1 1017
•2 1024
•3 1038</td></tr>
</table>
</td><td>3</td></tr>
</table>

Q3

6	a		Ans: 8 (°C) •[1] correct solution	1 (KU)	•[1] 8	**1**
6	b		Ans: 2 (°C) •[1] correct solution	1 (KU)	•[1] $-5 + 7 = 2$	**1**

Section B

Section B – Paper 1 – Questions

Q		Marks
1	9. Jamie took the overnight sleeper train from Edinburgh to London. She arrived in London at 0624. Her journey had taken 6 hours 58 minutes.  When did Jamie's sleeper train leave Edinburgh?	2
2	7. Colin works in a supermarket at the weekend. He is paid the basic rate of £7·50 per hour on Saturdays. He is paid at time and a half on Sundays. Last weekend he worked 7 hours on Saturday and 6 hours on Sunday.  Calculate Colin's total pay for last weekend.	3

3

8.

Urban Wildlife Park

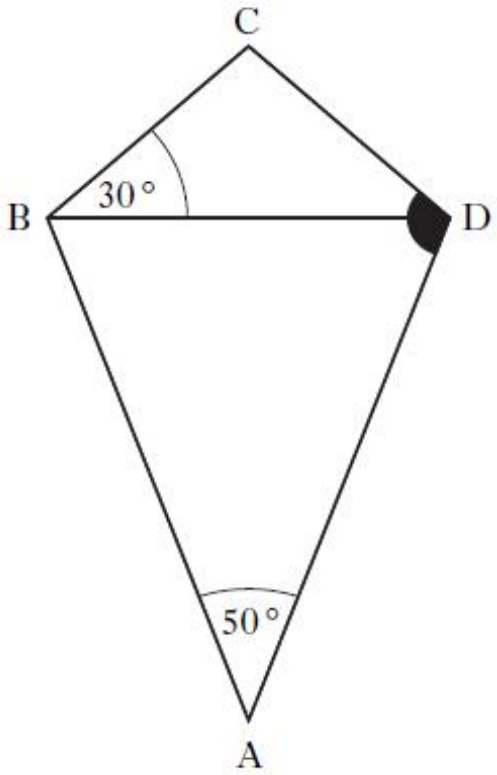
Admission Charges	
Adult	£13·50
Children aged 3 and under	£10·75
Children aged 4 to 16	£11·50
Family Ticket (1 Adult & 2 Children)	£32·00
Family Ticket (2 Adults & 2 Children)	£42·00
Family Ticket (2 Adults & 3 Children)	£51·00

Alan and Kate take their 12 year old twin daughters to the Urban Wildlife Park.

Instead of buying four individual tickets, they decide to buy a Family Ticket.

How much money do they save?

3

4	7. In the diagram: • ABCD is a kite • Angle DAB = 50° • Angle DBC = 30° Calculate the size of shaded angle ADC.  	**3**

Section B – Paper 2 – Questions

Q		Marks
5	1. In the Annual Fun Run, Lucy ran 12 kilometres in 1 hour 15 minutes. Calculate her average speed in kilometres per hour. 	3
6	8. The cash price of a 3D TV at Curlys Superstore is £1315. Curlys also has an interest free payment plan. The payment plan is a deposit plus twelve equal monthly payments. The deposit for the TV is £175.  Find the cost of the monthly payments.	3

Section B

MARKING SCHEME

Section B – Paper 1 – Marking Scheme

<table>
<tr><th>Q</th><th></th><th>Marks</th></tr>
<tr><td>1</td><td>
<table>
<tr><th>Question No</th><th>Give 1 mark for each •</th><th>Illustrations of evidence for awarding each mark</th></tr>
<tr><td>9</td><td>Ans: 2326
•1 correct strategy
•2 correct time calculation (over midnight)</td><td>•1 0624 – 6hrs 58mins
•2 2326
2K</td></tr>
</table>
NOTE:
(i)
<table>
<tr><th>Final Answers</th><th>With Working</th><th>Without Working</th></tr>
<tr><td>2326</td><td>2/2</td><td>2/2</td></tr>
<tr><td>1126 pm</td><td>2/2</td><td>2/2</td></tr>
<tr><td>2326 pm</td><td>2/2</td><td>2/2</td></tr>
<tr><td>1126(am)</td><td>1/2</td><td>1/2</td></tr>
<tr><td>2322 (0624 – 7h 2min)</td><td>1/2</td><td>0/2</td></tr>
<tr><td>1322 (0624 + 6h 58min)</td><td>1/2</td><td>0/2</td></tr>
</table>
</td><td>2</td></tr>
</table>

2

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
7	**Ans: (£)120(·00)**	
	•1 Saturday pay	•1 7 × 7·50 = 52·5
	•2 Sunday pay	•2 6 × (7·50 + 3·75) = 67·5
	•3 total pay	•3 52·50 + 67·50 = (£)120(·00)
		3K

NOTES:

(i) **Alternative strategy:**

•1 Sunday's hours	•1 6 + 3 = 9
•2 total hours	•2 9 + 7 = 16
•3 total pay	•3 16 × 7·50 = (£)120(·00)

(ii)

Final Answer	With Working	Without Working
(£)120	3/3	2/3

3

3

8	**Ans: (£) 8**	
	•1 cost of family ticket	•1 42
	•2 cost of 2 adults & 2 children	•2 2 × 13·50 + 2 × 11·50 = 50
	•3 correct calculation	•3 50 – 42 = (£)8
		3K

NOTES:

For a final answer of (£)8 without working award 1/3

3

4

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
7	**Ans: 95(°)**	
	•[1] use properties of isosceles triangle to find ∠BDC	•[1] 30°
	•[2] use properties of isosceles triangle to find ∠ADB	•[2] (180° – 50°) ÷ 2 = 65°
	•[3] correct addition of angles	•[3] 65° + 30° = 95(°)
		3R

3

NOTES:

(i) **Alternative strategy:**

•[1]	use ∠BCA = ∠DCA to find ∠DCA	•[1]	∠DCA = ½ × 120° = 60°
•[2]	use ∠CAB = ∠CAD to find ∠CAD	•[2]	∠CAD = ½ × 50° = 25°
•[3]	correct calculation to find ∠CDA	•[3]	∠CDA = 180° – (60° + 25°) = 95(°)

(ii) For a correct final answer without working award 2/3

Section B – Paper 2 – Marking Scheme

Q 5

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
1	**Ans: 9·6 (km/h)**	
	•[1] convert time to hours	•[1] 1 hr 15 mins = 1·25 hrs
	•[2] correct use of formula	•[2] 12/1·25
	•[3] correct calculation, must involve a division	•[3] 9·6 (km/h) **3K**

NOTE:

(i) Final Answers	With Working	Without Working
9·6	3/3	2/3
10·4 (12 ÷ 1.15)	2/3	0/3
0·16 (12 ÷ 75)	2/3	0/3
0·104 (1.25 ÷ 12)	2/3	0/3
6·25 (75 ÷ 12)	1/3	0/3
0·104 (12 ÷ 115)	1/3	0/3

Marks

Q 6

8	**Ans: (£)95**	
	•[1] correct subtraction of deposit	•[1] 1315 – 175 = 1140
	•[2] dividing above amount by 12	•[2] 1140 ÷ 12
	•[3] correct calculations, minimum 2	•[3] (£)95 **3R**

NOTE:

(i) Final Answers	With Working	Without Working
95	3/3	2/3
124·17 or 124·16 ((1315 + 175) ÷ 12)	2/3	0/3
109·58 or 109·59 (1315 ÷ 12)	1/3	0/3