

N5 APPLICATIONS 1.3

This resource is to support pupils in passing the appropriate National 5 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 5 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

<u>Unit Assessment Standard</u>	<u>Sub skills</u>	Section A – Question Number
Applications 1.3 Applying numerical skills to fractions and percentages	working with reverse percentages working with appreciation/depreciation combination of operations on fractions including mixed numbers	Q1 Q2 (appreciation) Q3 (depreciation) Q4 (adding) Q5 (subtracting) Q6 (multiplication) Q7 (division)

FORMULAE LIST

The roots of $ax^2 + bx + c = 0$ are $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Sine rule: $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

Cosine rule: $a^2 = b^2 + c^2 - 2bc \cos A$ or $\cos A = \frac{b^2 + c^2 - a^2}{2bc}$

Area of a triangle: $A = \frac{1}{2}ab \sin C$

Volume of a sphere: $V = \frac{4}{3}\pi r^3$

Volume of a cone: $V = \frac{1}{3}\pi r^2 h$

Volume of a pyramid: $V = \frac{1}{3}Ah$

Standard deviation: $s = \sqrt{\frac{\sum(x - \bar{x})^2}{n-1}} = \sqrt{\frac{\sum x^2 - (\sum x)^2/n}{n-1}}$, where n is the sample size.

Section A

Section A

Q		Marks
1 P1	<p>7. This year, Ben paid £260 for his car insurance. This is an increase of 30% on last year's payment.</p> <p>How much did Ben pay last year?</p>	3
2 P2	<p>1. Alistair buys an antique chair for £600. It is expected to increase in value at the rate of 4.5% each year. How much is it expected to be worth in 3 years?</p>	2
3 P2	<p>1. It is estimated that an iceberg weighs 84 000 tonnes. As the iceberg moves into warmer water, its weight decreases by 25% each day. What will the iceberg weigh after 3 days in the warmer water? Give your answer correct to three significant figures.</p>	4
4 P2	<p>2. Evaluate</p> $4\frac{1}{3} + 1\frac{1}{2}.$	2
5 P1	<p>2. Evaluate</p> $4\frac{1}{3} - 1\frac{1}{2}.$	2
6 P1	<p>1. Evaluate $\frac{5}{12} \times 2\frac{2}{9}$. Give the answer in simplest form.</p>	2
7 P1	<p>2. Evaluate</p> $3\frac{1}{6} \div 1\frac{2}{3}.$	2

Section A

Marking

Scheme

Section A - Marking Scheme

1	7	<p>Ans: £200</p> <ul style="list-style-type: none"> • valid strategy • processing • solution 	<ul style="list-style-type: none"> • $130\% = 260$ • $100\% = \frac{260}{1.3}$ • 200 <p style="text-align: right;">3KU</p>															
<p>NOTES:</p> <p>(i) for £200, with or without working award 3/3</p> <p>(ii) for £371.43 ($70\% = £260$), with working award 2/3</p> <p>(iii) for £338 (130% of £260), with or without working award 0/3</p> <p>(iv) for £182 (70% of £260), with or without working award 0/3</p> <p>(v) caution: some candidates state $130\% = £260$ and follow this as note (iii) or (iv); in these cases, the 1st mark is still available</p>																		
2	P2	Give 1 mark for each •	Illustrations of evidence for awarding each mark															
1	<p>Ans: £684.70</p> <ul style="list-style-type: none"> • multiplying factor • power of 3 • solution 	<ul style="list-style-type: none"> • 1.045 • 1.045^3 • £684.70 <p style="text-align: right;">3KU</p>																
<p>Notes:</p> <p>(i) for £684.70, £684.69, £685 or £684 with or without working award $\frac{3}{3}$</p> <p>(ii) for multipliers with working of</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;"></td> <td style="width: 10%; text-align: center;">0.955</td> <td style="width: 10%; text-align: center;">→</td> <td style="width: 10%; text-align: center;">£522.59</td> <td style="width: 30%;"></td> </tr> <tr> <td></td> <td style="text-align: center;">1.45</td> <td style="text-align: center;">→</td> <td style="text-align: center;">£1829.17/8</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">0.55</td> <td style="text-align: center;">→</td> <td style="text-align: center;">£99.82/3</td> <td style="text-align: right;">award $\frac{2}{3}$</td> </tr> </table> <p>(iii) for a final answer of £627 from $(0.045 \times 600) + 600$ award $\frac{1}{3}$</p> <p>(iv) for an answer of £681 from $(0.045 \times 600 \times 3) + 600$ award $\frac{0}{3}$</p> <p>(v) for an incorrect answer without working award $\frac{0}{3}$</p> <p>(vi) for the final mark, the answer must be rounded appropriately</p> <p>(vii) do not penalise premature rounding</p>					0.955	→	£522.59			1.45	→	£1829.17/8			0.55	→	£99.82/3	award $\frac{2}{3}$
	0.955	→	£522.59															
	1.45	→	£1829.17/8															
	0.55	→	£99.82/3	award $\frac{2}{3}$														


3	1	<p>Ans: 35 400 tonnes</p> <ul style="list-style-type: none"> • multiplying factor • power of 3 • solution • rounding 	<ul style="list-style-type: none"> • 0.75 • 0.75^3 • 35 437.5 • 35 400 	4KU
	<p>NOTES:</p> <p>(i) for 35 400, with or without working award 4/4</p> <p>(ii) for 1310, with or without working ($\times 0.25^3$) award 3/4</p> <p>(iii) for 164 000, with or without working ($\times 1.25^3$) award 3/4</p> <p>(iv) for 21 000, with or without working award 0/4</p> <p>For any other final answers</p> <p>(v) the 3rd mark is for an unrounded answer</p> <p>(vi) the last mark is for correctly rounding the number given for the 3rd mark</p> <p>(vii) candidates who do not give an unrounded number cannot be awarded the last two marks</p>			
4	2	<p>Ans: $5\frac{5}{6}$</p> <ul style="list-style-type: none"> • common denominator • fraction 	<ul style="list-style-type: none"> • $4\frac{2}{6} + 1\frac{3}{6}$ • $\frac{35}{6}$ 	2KU
5	2	<p>Ans: $2\frac{5}{6}$</p> <ul style="list-style-type: none"> • common denominator • fraction 	<ul style="list-style-type: none"> • $4\frac{2}{6} - 1\frac{3}{6}$ • $\frac{17}{6}$ 	2KU

6	Question	Expected Answer(s) Give one mark for each •	Max Mark	Illustrations of evidence for awarding a mark at each •	
	1.	Ans: $\frac{25}{27}$ • ¹ start to multiply fractions • ² consistent answer in simplest form	2	• ¹ $\frac{5}{12} \times \frac{20}{9}$ or $2 \times \frac{5}{12} + \frac{2}{9} \times \frac{5}{12}$ • ² $\frac{25}{27}$	
Notes: 1. Correct answer without working award 2/2. 2. $\frac{100}{108}$ (no working necessary) award 1/2. 3. 2 nd mark only available where simplifying is required. 4. For subsequent incorrect working, the final mark is not available eg $\frac{25}{27} = 1\frac{2}{27}$ award 1/2.					
7	Question No	Give 1 mark for each •		Illustrations of evidence for awarding each mark	
	2	Ans: $\frac{19}{10}$ • expressing as a multiplication • carrying out the multiplication		• $\times \frac{3}{5}$ • $\frac{19}{10}$ or equivalent	2KU
Notes: (i) for $\frac{19}{10}$ with or without working award $\frac{2}{2}$ (ii) for $\frac{95}{18}$ with or without working award $\frac{1}{2}$ (iii) for any other answer without working award $\frac{0}{2}$ (iv) for the second mark, the only acceptable multipliers are $\frac{3}{5}$ or $\frac{5}{3}$					

Section B

Section B

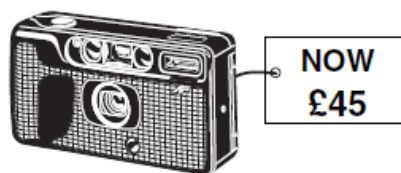
Paper 1 Questions

Q		Marks
1	<p>3. There are 400 people in a studio audience.</p> <p>The probability that a person chosen at random from this audience is male is $\frac{5}{8}$.</p> <p>How many males are in this audience?</p>	2
2	<p>6. There are 4 girls and 14 boys in a class.</p> <p>A child is chosen at random and is asked to roll a die, numbered 1 to 6.</p> <div style="text-align: right; margin-right: 100px;">  </div> <p>Which of these is more likely?</p> <p>A: the child is female.</p> <p style="text-align: center;">OR</p> <p>B: the child rolls a 5.</p> <p>Justify your answer.</p>	3 (2.1) (2.2)
3	<p>1. Evaluate</p> <p style="text-align: center;">$40\% \text{ of } \pounds 11.50 - \pounds 1.81.$</p>	2
4	<p>2. Evaluate</p> <p style="text-align: center;">$\frac{2}{5} \div 1\frac{1}{10}.$</p>	2

<p>5</p>	<p>6. Cleano washing powder is on special offer.</p> <div> </div> <p>Each box on special offer contains 20% more powder than the standard box.</p> <p>A box on special offer contains 900 grams of powder.</p> <p>How many grams of powder does the standard box contain?</p>	<p>3</p>
<p>6</p>	<p>5. Jamie is going to bake cakes for a party.</p> <p>He needs $\frac{2}{5}$ of a block of butter for 1 cake.</p> <div> </div> <p>He has 7 blocks of butter.</p> <p>How many cakes can Jamie bake?</p>	<p>3</p>
<p>7</p>	<p>5. Mike is practising his penalty kicks.</p> <p>Last week, Mike scored 18 out of 30.</p> <p>This week, he scored 16 out of 25.</p> <p>Has his scoring rate improved?</p> <p>Give a reason for your answer.</p> <div> </div>	
<p>8</p>	<p>2. Evaluate</p> $\frac{1}{2} \div 2\frac{2}{3}$	<p>2</p>

Paper 2 Questions

Q		Marks
9	<p>5. Mark takes some friends out for a meal.</p> <p>The restaurant adds a 10% service charge to the price of the meal.</p> <p>The total bill is £148.50.</p> <p>What was the price of the meal?</p>	3
10	<p>1. A local council recycles 42 000 tonnes of waste a year.</p> <p>The council aims to increase the amount of waste recycled by 8% each year.</p> <p>How much waste does it expect to recycle in 3 years time?</p> <p>Give your answer to three significant figures.</p>	4
11	<p>3. In a sale, all cameras are reduced by 20%.</p> <p>A camera now costs £45.</p> <p>Calculate the original cost of the camera.</p>	3
12	<p>8. A company makes large bags of crisps which contain 90 grams of fat.</p> <p>The company aims to reduce the fat content of the crisps by 50%.</p> <p>They decide to reduce the fat content by 20% each year.</p> <p>Will they have achieved their aim by the end of the 3rd year?</p> <p>Justify your answer.</p>	4 (2.2)
13	<p>9. The ratio of sugar to fruit in a particular jam is 5 : 4.</p> <p>It is decided to:</p> <ul style="list-style-type: none"> • decrease the sugar content by 20% • increase the fruit content by 20%. <p>Calculate the new ratio of sugar to fruit.</p> <p>Give your answer in its simplest form.</p>	4



14	<p>1. Olga normally runs a total distance of 28 miles per week. She decides to increase her distance by 10% a week for the next four weeks. How many miles will she run in the fourth week?</p>	3
15	<p>4. A car is valued at £3780. This is 16% less than last year's value. What was the value of the car last year?</p>	3
16	<p>1. There are 2.69 million vehicles in Scotland. It is estimated that this number will increase at a rate of 4% each year. If this estimate is correct, how many vehicles will there be in 3 years' time? Give your answer correct to 3 significant figures.</p>	4
17	<p>6. The price for Paul's summer holiday is £894.40. The price includes a 4% booking fee. What is the price of his holiday without the booking fee?</p>	3
18	<p>4. Last year, 1296 learner drivers from "Topflight" school of motoring passed their driving test. This was 72% of those who sat their driving test from Topflight. How many failed their driving test?</p>	3 (2.2)
19	<p>7. Jack weighs 94 kilograms. On the 1st of January, he starts a diet which is designed to reduce his weight by 7% per month. During which month should he achieve his target weight of 73 kilograms? Show all your working.</p>	4 (2.2)
20	<p>1. There are 964 pupils on the roll of Aberleven High School. It is forecast that the roll will decrease by 15% per year. What will be the expected roll after 3 years? Give your answer to the nearest ten.</p>	3

Section B

MARKING

SCHEME

Section B – Marking Scheme

Marking Scheme

Paper 1

Q				Marks
1	Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark	
	3	Ans: 250 <ul style="list-style-type: none"> • valid strategy • solution 	<ul style="list-style-type: none"> • multiplication by $\frac{5}{8}$ • 250 <p style="text-align: right;">2RE</p>	
Notes: <p>(i) for an answer of 250 without working award $\frac{2}{2}$</p> <p>(ii) for an answer of $50 \left(\frac{400}{8}\right)$ with working award $\frac{1}{2}$</p> <p>(iii) for an answer of 2000 with or without working award $\frac{0}{2}$</p>				
2	6	Ans: P(female) plus justification <ul style="list-style-type: none"> • probability (female) • probability (5) • communication 	<ul style="list-style-type: none"> • $\frac{4}{18}$ • $\frac{1}{6}$ • female (with justification) <p style="text-align: right;">3RE</p>	
	NOTES: <p>(i) for the 3rd mark, justification must show</p> <p>(a) both probabilities with same numerator or denominator and</p> <p>(b) a consistent decision</p>			

3	1	<p>Ans: £2.79</p> <ul style="list-style-type: none"> • knowing correct order of operations • carrying out both calculations 	<ul style="list-style-type: none"> • 4.60 • 2.79 	2KU	
	NOTES:				
		(i) for 2.79, with or without working		award 2/2	
		(ii) for 3.876, 3.88 or 3.87, with or without working		award 1/2	
4	2	<p>Ans: $\frac{4}{11}$</p> <ul style="list-style-type: none"> • valid strategy • correct calculation 	<ul style="list-style-type: none"> • $\frac{2}{5} \times \frac{10}{11}$ • $\frac{4}{11}$ or equivalent 	2KU	
	NOTES:				
		(i) alternative valid strategies for first mark:			
		<ul style="list-style-type: none"> • $\frac{4}{10} \div \frac{11}{10}$ • $\frac{0.4}{1.1}$ 			
		(ii) for $\frac{2}{5} \times \frac{11}{10} = \frac{22}{50}$			
		or $\frac{5}{2} \times \frac{11}{10} = \frac{55}{20}$			
		or $\frac{5}{2} \times \frac{10}{11} = \frac{50}{22}$		award 1/2	
		(iii) for $\frac{4}{11} = 2\frac{3}{4}$ or $2\frac{3}{11}$		award 1/2	

5	6	<p>Ans: 750 grams</p> <ul style="list-style-type: none"> • valid strategy • processing • solution 	<ul style="list-style-type: none"> • 120% = 900 • 20% = 150 or similar • 750 	3KU
	<p>NOTES:</p> <p>(i) for 750 with or without working award 3/3</p> <p>(ii) for 720 (80% of 900) with or without working award 0/3</p> <p>(iii) for 1080 (120% of 900) with or without working award 0/3</p> <p>(iv) caution: some candidates state 120% = 900 but follow this as note (ii) or (iii); in these cases, the 1st mark is still available</p>			
6	5	<p>Ans: 17</p> <ul style="list-style-type: none"> • strategy • processing • communication 	<ul style="list-style-type: none"> • $7 \div \frac{2}{5}$ • $\frac{35}{2}$ • 17 	3RE
	<p>NOTES:</p> <p>(i) for an answer of 17 with no working award 0/3</p> <p>(ii) the third mark is available only for a whole number</p> <p>(iii) a pictorial representation or a build up of fractions are each valid strategies</p> <p>Caution: many candidates confuse “number of cakes” and “quantities of butter”</p> <p style="text-align: center;">eg $7 \times \frac{1}{5} = \frac{7}{5} = 3.5$ cakes</p>			

7	5	<p>Ans: yes, plus justification</p> <ul style="list-style-type: none"> • strategy • continue strategy • communication 	<ul style="list-style-type: none"> • $\frac{90}{150}$ or 0.6 • $\frac{96}{150}$ or 0.64 • yes, because $\frac{96}{150} > \frac{90}{150}$ or 0.64 > 0.6 	3RE	
	<p>NOTES:</p> <p>(i) The communication must include reference to both values or the use of comparative language.</p> <p>(ii) $\frac{18}{30} = \frac{3}{5} = \frac{15}{25}$ gains the first 2 marks.</p>				
8	2	<p>Evaluate</p> $\frac{1}{2} \div 2\frac{2}{3}$ <p>Ans: $\frac{3}{16}$</p> <ul style="list-style-type: none"> •¹ process •² a correct calculation 	2	<ul style="list-style-type: none"> •¹ $\frac{1}{2} \times \frac{3}{8}$ •² $\frac{3}{16}$ 	(KU)
	<p>Notes:</p> <p>(i) for $\frac{3}{16}$ with/without working award 2/2</p> <p>(ii) for $\frac{8}{6}$ or $1\frac{2}{6}$ with/without working award 1/2</p> <p>(iii) $\frac{3}{16}$ leading to $5\frac{1}{3}$ cannot be awarded the second mark</p>				

Paper 2

Q				Marks				
9	Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark					
	5	Ans: £135 <ul style="list-style-type: none"> • valid strategy • processing • solution 	<ul style="list-style-type: none"> • 110% = £148·50 • 1% = £1·35 • £135 <p style="text-align: right;">3KU</p>					
	Notes: <table style="width: 100%; border: none;"> <tr> <td style="width: 70%;">(i) for £135 with or without working</td> <td style="text-align: right; vertical-align: bottom;">award $\frac{3}{3}$</td> </tr> <tr> <td>(ii) for £133·65 (90% of £148·50) with or without working</td> <td style="text-align: right; vertical-align: bottom;">award $\frac{0}{3}$</td> </tr> <tr> <td>(iii) for £163·35 (110% of £148·50) with or without working</td> <td style="text-align: right; vertical-align: bottom;">award $\frac{0}{3}$</td> </tr> </table>				(i) for £135 with or without working	award $\frac{3}{3}$	(ii) for £133·65 (90% of £148·50) with or without working	award $\frac{0}{3}$
(i) for £135 with or without working	award $\frac{3}{3}$							
(ii) for £133·65 (90% of £148·50) with or without working	award $\frac{0}{3}$							
(iii) for £163·35 (110% of £148·50) with or without working	award $\frac{0}{3}$							

10	1	<p>Ans: 52 900 tonnes</p> <ul style="list-style-type: none"> • multiplying factor • power of 3 • solution (unrounded) • solution (rounded) 	<ul style="list-style-type: none"> • 1.08 • 1.08^3 • 52 907.90 • 52 900 	4KU	
	<p>Notes:</p> <p>(i) for 52 900, with or without working award $\frac{4}{4}$</p> <p>(ii) for 245 000, with or without working ($\times 1.8^3$) award $\frac{3}{4}$</p> <p>(iii) for 32 700, with or without working ($\times 0.92^3$) award $\frac{3}{4}$</p> <p>(iv) for any other final answers, an unrounded solution must be stated to access the 3rd and 4th marks</p> <p>(v) candidates using simple interest may only be awarded the last mark ($(3 \times 3360) + 42\,000 = 52\,080 \rightarrow 52\,100$)</p>				
11	3	<p>Ans: £56.25</p> <ul style="list-style-type: none"> • valid strategy • processing • solution 	<ul style="list-style-type: none"> • $80\% = 45$ • $100\% = \frac{45}{0.8}$ • 56.25 	3KU	
	<p>Notes:</p> <p>(i) for £56.25, with or without working award $\frac{3}{3}$</p> <p>(ii) for £37.50 ($120\% = £45$), with working award $\frac{2}{3}$</p> <p>(iii) for £36 (80% of £45), with or without working award $\frac{0}{3}$</p> <p>(iv) for £54 (120% of £45), with or without working award $\frac{0}{3}$</p> <p>(v) Caution: Some candidates state $80\% = 45$ but continue as in notes (iii) or (iv). In these cases, the 1st mark is still available</p>				

12	8	<p>Ans: no, plus justification</p> <ul style="list-style-type: none"> • multiplying factor • power of 3 • process • communication 	<ul style="list-style-type: none"> • 0.8 • 0.8^3 • 0.512 • no, because $51.2\% > 50\%$ 	<p>or</p> <ul style="list-style-type: none"> 20% 3 years 46.08 no, because $46.08 > 45$ <p>4RE</p>		
	<p>NOTES:</p> <p>(i) for 'simple' depreciation, only the final mark is available</p>					
13	9	<p>Ans: 5:6</p> <ul style="list-style-type: none"> • new sugar ratio • new fruit ratio • new ratio • simplified ratio 	<ul style="list-style-type: none"> • 4 parts • 4:8 parts • 4:4:8 • 5:6 	4RE		
14	1	<p>Ans: 40-9948</p> <ul style="list-style-type: none"> • multiplying factor • power of 4 • solution 	<ul style="list-style-type: none"> • 1-1 • $1-1^4$ • 40-9948 or 40-995 or 40-99 	3KU		
	<p>NOTES:</p> <p>(i) for 40-9948, with or without working award 3/3</p> <p>(ii) for 40 or 41 ($28 \times (1-1)^4$) award 3/3</p> <p>(iii) for 18-3708 (28×0.9^4), with or without working award 2/3</p> <p>(iv) for 39-2 (28×1.4), with or without working award 0/3</p>					

15	4	<p>Ans: £4500</p> <ul style="list-style-type: none"> • valid strategy • processing • solution 	<ul style="list-style-type: none"> • $84\% = £3780$ • $100\% = \frac{3780}{0.84}$ • 4500 	3KU
	<p>NOTES:</p> <p>(i) for £4500, with or without working award 3/3</p> <p>(ii) for £3258.62 ($116\% = £3780$), with working award 2/3</p> <p>(iii) for £3175.20 (84% of £3780), with or without working award 0/3</p> <p>(iv) for £4384.80 (116% of £3780), with or without working award 0/3</p> <p>(v) caution: some candidates state $84\% = £3780$ and follow this as note (iii) or (iv); in these cases, the 1st mark is still available</p>			
16	1	<p>Ans: 3.03 million</p> <ul style="list-style-type: none"> • multiplying factor • power of 3 • solution • rounding 	<ul style="list-style-type: none"> • 1.04 • 1.04^3 • 3 025 884 • 3.03 million 	4KU
	<p>NOTES:</p> <p>(i) for 3 030 000, with or without working award 4/4</p> <p>(ii) for 2 380 000 ($\times 0.96^3$), with or without working award 3/4</p> <p>(iii) for 3.03, with or without working award 3/4</p> <p>(iv) for 3 010 000 (2.69×1.12), with or without working award 1/4</p> <p>(v) for 8 390 000, with or without working award 0/4</p>			

<p>17</p>	<p>6</p>	<p>Ans: £860</p> <ul style="list-style-type: none"> • valid strategy • processing • solution 	<ul style="list-style-type: none"> • $104\% = 894 \cdot 40$ • $1\% = \frac{894 \cdot 4}{104}$ or similar • 860 <p style="text-align: right;">3KU</p>	
	<p>NOTES:</p> <p>(i) for 860 with or without working award 3/3</p> <p>(ii) for 931·67 ($96\% = 894 \cdot 4$) with or without working award 2/3</p> <p>(iii) for 930·17 (104% of 894·4) with or without working award 0/3</p> <p>(iv) for 858·62 (96% of 894·4) with or without working award 0/3</p> <p>(v) CAUTION: Some candidates state $104\% = 894 \cdot 40$ and follow this as note (iii) or (iv); in these cases, the 1st mark is still available</p> <p>(vi) for candidates who ignore the initial 40p (leading to 859·62), the maximum mark available is 2/3</p>			
<p>18</p>	<p>4</p>	<p>Last year, 1296 learner drivers from “Topflight” school of motoring passed their driving test.</p> <p>This was 72% of those who sat their driving test from Topflight.</p> <p>How many failed their driving test?</p> <p>Ans: 504</p> <ul style="list-style-type: none"> •¹ valid strategy •² processing •³ solution 	<p style="text-align: center;">3</p> <ul style="list-style-type: none"> •¹ $72\% = 1296$ •² $1\% = \frac{1296}{72} = 18$ •³ $18 \times 28 = 504$ <p style="text-align: center;">(RE)</p>	
<p>Notes:</p> <p>(i) for 504, with/without working award 3/3</p> <p>(ii) for candidates who calculate either 28% or 72% of 1296 award 0/3</p> <p>(iii) the final mark is for multiplying 1% by 28</p>				

19	7	<p>Jack weighs 94 kilograms.</p> <p>On the 1st of January, he starts a diet which is designed to reduce his weight by 7% per month.</p> <p>During which month should he achieve his target weight of 73 kilograms?</p> <p>Show all your working.</p> <p>Ans: during April</p> <ul style="list-style-type: none"> •¹ reduction factor •² processing •³ continuation •⁴ communication 	4	<ul style="list-style-type: none"> •¹ 0.93 •² $0.93 \times 94 = 87.42$ •³ ... 75.6 •⁴ During April or 4th month 																			
	<p>Notes:</p> <p>(i) for use of a "simple interest" method only the first two marks are available</p>		(RE)																				
20	Question	Expected Answer(s) Give one mark for each •	Max Mark	Illustrations of evidence for awarding a mark at each •																			
	1.	<p>Ans: 590</p> <ul style="list-style-type: none"> •¹ know how to decrease by 15% •² know how to calculate roll •³ carry out calculations correctly within a valid strategy and round to the nearest ten 	3	<ul style="list-style-type: none"> •¹ $\times 0.85$ •² 964×0.85^3 •³ 590 																			
<p>Notes:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">1. For an answer of 590 without working</td> <td style="width: 20%;">award 3/3</td> <td style="width: 30%; text-align: right;">✓✓✓</td> </tr> <tr> <td>2. For an answer of 592 or 592.0165 without working</td> <td>award 2/3</td> <td style="text-align: right;">✓✓x</td> </tr> <tr> <td>3. Where an incorrect percentage has been used, the working must be followed through to give the possibility of awarding 2/3</td> <td></td> <td style="text-align: right;">x✓✓</td> </tr> <tr> <td>4. For an answer of 2460 ($964 \times 0.85 \times 3$) with working,</td> <td>award 1/3</td> <td style="text-align: right;">✓xx</td> </tr> <tr> <td>5. For an answer of 530 ($964 - 964 \times 0.15 \times 3$) with working,</td> <td>award 1/3</td> <td style="text-align: right;">✓xx</td> </tr> <tr> <td>6. For an answer of 430 ($964 \times 0.15 \times 3$)</td> <td>award 0/3</td> <td style="text-align: right;">xxx</td> </tr> </table>						1. For an answer of 590 without working	award 3/3	✓✓✓	2. For an answer of 592 or 592.0165 without working	award 2/3	✓✓x	3. Where an incorrect percentage has been used, the working must be followed through to give the possibility of awarding 2/3		x✓✓	4. For an answer of 2460 ($964 \times 0.85 \times 3$) with working,	award 1/3	✓xx	5. For an answer of 530 ($964 - 964 \times 0.15 \times 3$) with working,	award 1/3	✓xx	6. For an answer of 430 ($964 \times 0.15 \times 3$)	award 0/3	xxx
1. For an answer of 590 without working	award 3/3	✓✓✓																					
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3. Where an incorrect percentage has been used, the working must be followed through to give the possibility of awarding 2/3		x✓✓																					
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