TV Licensing Annual Review

Name _____ Date _____

Source: TV Licensing Annual review 2018-2019 https://www.tvlicensing.co.uk/about/our-performance-AB6

For better resolution and clarity download and print this as a separate A4 PDF from the link above.

TV Licensing – non calculator section

Name _____ Date _____

Part A – reading & writing large numbers

You must show your working out.  **Do not use a calculator.**

1. How many addresses did TV Licensing visit last year?

a. Write the number as it appears in the poster. _____

(E3.21, L2.1 - 1 mark)

b. Write the number out fully in figures. _____

(L2.1 - 1 mark)

c. Write the number in words. _____

_____ (L2.1 - 1 mark)

2. Last year, how many people were caught watching TV without a licence?

a. Write the number as it appears in the poster. _____

(E3.21, L2.1 - 1 mark)

b. Write the number as a decimal part of a thousand. _____thousand

(L2.1 - 1 mark)

c. Write the number in words. _____

_____ (L2.1 - 1 mark)

3. How many TV licences were in force in 2018/19?

a. Write the number as it appears in the poster. _____

(E3.21, L2.1 - 1 mark)

b. Write the number out fully in figures _____

(L2.1 - 1 mark)

c. Write the number in words. _____

_____ (L2.1 - 1 mark)

TV Licensing – non calculator section

Name _____ Date _____

Part B – calculating with money

You must show your working out.  **Do not use a calculator.**

4. By how much did the cost of a licence increase in 2018-19?
Show your working out and your answer in the box.

(E3.10, E3.21 - 3 marks)

5. Total cost of collecting the TV Licence was £102.6 million.
What is this total made up of? Check the calculation using other data from the same part of the poster. Is it correct?

(E3.8, L1.11, L2.13 - 3 marks)

6. Licence fee income generated more than £3.6 billion.
How much was generated the previous year?
Show your working out and your answer in the box.

(L2.1, L2.2, L2.13 and beyond - 3 marks) Stretch

TV Licensing – non calculator section

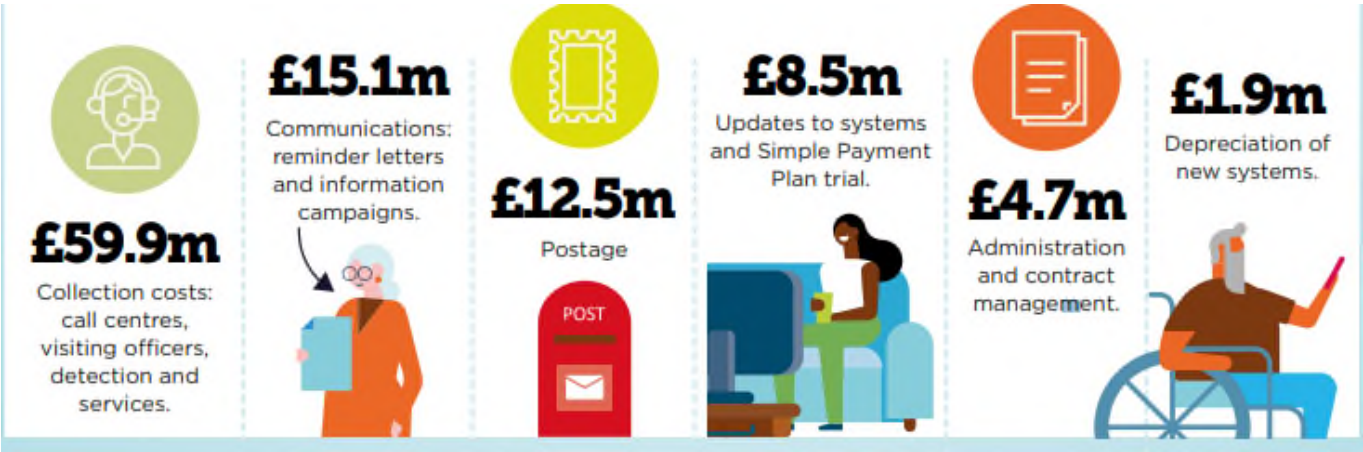
Name _____ Date _____

Part C – fractions, decimals & percentages

You must show your working out. Do not use a calculator.

7. The cost of collecting the TV Licence.

Write the six decimals in order of size. Start with the smallest.



_____ (E2.11, L1.10 - 2 marks)

8. Over the past 5 years the number of complaints has reduced by 31.2%.

This is a reduction of:

a little more than 1/3	a little less than 1/3	about 1/2
( )	( )	( )

Tick (✓) one (L1.16 - 1 mark).

9. Over 88% people buying a licence online chose to go paperless.

a. This is approximately:

9/10	8/8	8/10
( )	( )	( )

Tick (✓) one (L2.4 - 1 mark).

b. 88% is equivalent to:

11/8	44/100	22/25
( )	( )	( )

Tick (✓) one (L2.4 - 1 mark).

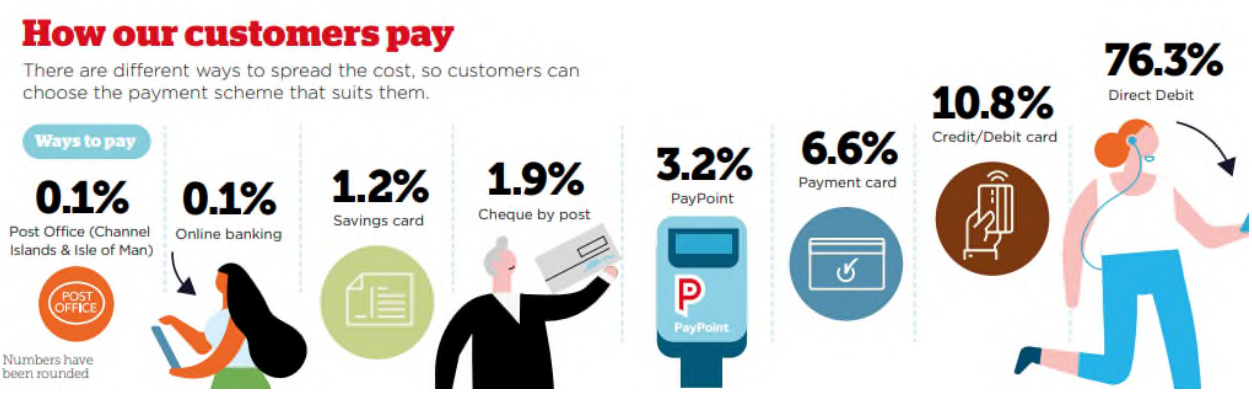
TV Licensing – calculator section

Name _____ Date _____

Part D – percentages

You must show your working out. You may use a calculator.

10.



a. Do the eight percentages add up to 100%?
Show your working out and comment on your answer.

(E3.10, L1.13? - 3 marks)

b. Round each percentage to the nearest whole number.
Write your answers on the line in **descending** order. (L1.12 - 2 marks)

_____

11.

Calculate this change as a percentage increase.
Show your working out and your answer in the box. (L2.6 - 2 marks)

TV Licensing – calculator section

Name _____ Date _____

Part D – percentages

You must show your working out. **You may use a calculator.**

12. There were 9.4 million transactions on the TVL website in 2018-19 – an increase of 7% on the previous year. How many visits were there in 2017-18?
Show your working out and your answer in the box.

(L2.6 - 2 marks)

13. There were 26.5 million visits to the TVL website in 2018-19 – an increase of 9% on the previous year. How many visits were there in 2017-18?
Show your working out and your answer in the box.

(L2.6 - 2 marks)

14. There are 25.8m licences in force. 0.1% customers pay using online banking.
How many customers is this?
Show your working out and your answer in the box.

(L2.6 and beyond - 3 marks) Stretch

Subject content – Reformed FUNCTIONAL SKILLS MATHEMATICS 2018

(takes effect from September 2019)

✓ indicates main **content** and **problem-solving skill(s)** covered in this resource, although these will vary with the student group and how the resource is used by the teacher. → or ← = not covered but included to show progression across levels (*content at each level subsumes and builds upon the content at lower levels).*
Full content at: DfE (Feb 2018) https://www.gov.uk/government/publications/functional-skills-subject-content-mathematics

1. Fundamental mathematical knowledge and skills These must be demonstrated in their own right, **both with and without a calculator**, in addition to being used to solve problems or complete tasks.

Entry Levels 2 & 3	Level 1	Level 2
Using numbers and the number system (N)		
1. Count reliably up to 100 items 2. Read, write, order and compare numbers up to 200 → 3. Recognise and sequence odd and even numbers up to 100 4. Recognise and interpret the symbols +, – , x, ÷ and = appropriately 5. Add and subtract two-digit numbers→ 6. Multiply whole numbers in the range 0x0 to 12x12 (times tables) 7. Know the number of hours in a day and weeks in a year. 8. Divide two-digit whole numbers by single-digit whole numbers and express remainders 9. Approximate by rounding to the nearest 10, and use this rounded answer to check results → 10. Recognise simple fractions (halves, quarters and tenths) of whole numbers and shapes 11. Read, write and use decimals to one decimal place ✓ Q7	L1.1 Read, write, order and compare large numbers (up to one million) ✓ L1.2 Recognise and use positive and negative numbers L1.3 Multiply and divide whole numbers and decimals by 10, 100, 1000 L1.4 Use multiplication facts and make connections with division facts L1.5 Use simple formulae expressed in words for one or two-step operations L1.6 Calculate the squares of one-digit and two-digit numbers L1.7 Follow the order of precedence of operators L1.8 Read, write, order and compare common fractions and mixed numbers 1.9 Find fractions of whole number quantities or measurements L1.10 Read, write, order and compare decimals up to three decimal places ✓ Q7 L1.11 Add, subtract, multiply and divide decimals up to 2 decimal places ✓Q5 L1.12 Approximate by rounding to a whole number or to one or two decimal places ✓Q10b L1.13 Read, write, order and compare percentages in whole numbers ✓Q10a? 1.14 Calculate percentages of quantities, including simple percentage increases / decreases by 5% and multiples thereof → L1.15 Estimate answers to calculations using fractions and decimals L1.16 Recognise and calculate equivalences between common fractions, percentages and decimals ✓Q8 L1.17 Work with simple ratio and direct proportions	L L2.1 Read, write, order and compare positive and negative numbers of any size ✓ Q1b, c. Q2b, c. Q3b,c. Q6 L2.2 Carry out calculations with numbers up to one million including strategies to check answers including estimation and approximation ✓ Q6 L2.3 Evaluate expressions and make substitutions in given formulae in words and symbols L2.4 Identify and know the equivalence between fractions, decimals and percentages ✓ Q9a, b L2.5 Work out percentages of amounts and express one amount as a percentage of another L2.6 Calculate percentage change (any size increase and decrease), and original value after percentage change ✓Q12, Q13 Q14. L2.7 Order, add, subtract and compare amounts or quantities using proper and improper fractions and mixed numbers L2.8 Express one number as a fraction of another L2.9 Order, approximate and compare decimals L2.10 Add, subtract, multiply and divide decimals up to three decimal places L2.11 Understand and calculate using ratios, direct proportion and inverse proportion L2.12 Follow the order of precedence of operators, including indices ←
E3.1 Count, read, write, order and compare numbers up to 1000 → E3.2 Add and subtract using three-digit whole numbers → E3.3 Divide three-digit whole numbers by single and double digit whole numbers and express remainders E3.4 Multiply two-digit whole numbers by single and double digit whole numbers E3.5 Approximate by rounding numbers less than 1000 to the nearest 10 or 100 and use this rounded answer to check results → E3.6 Recognise and continue linear sequences of numbers up to 100 E3.7 Read, write and understand thirds, quarters, fifths and tenths including equivalent forms → E3.8 Read, write and use decimals up to two decimal places ✓Q5 E3.9 Recognise and continue sequences that involve decimals		

1. Fundamental mathematical knowledge and skills These must be demonstrated in their own right, **both with and without a calculator**, in addition to being used to solve problems or complete tasks.		
Entry Level 3	**Level 1**	**Level 2**
Using common measures, shape and space (MSS)		
E3.10 Calculate with money using decimal notation & express money correctly in writing in pounds and pence ✓ Q4, Q10a E3.11 Round amounts of money to the nearest £1 or 10p E3.12 Read, measure and record time using am and pm E3.13 Read time from analogue and 24 hour digital clocks in hours and minutes E3.14 Use and compare measures of length, capacity, weight and temperature using metric or imperial units to the nearest labelled or unlabelled division E3.15 Compare metric measures of length including millimetres, centimetres, metres and kilometres E3.16 Compare measures of weight including grams and kilograms E3.17 Compare measures of capacity including millilitres and litres E3.18 Use a suitable instrument to measure mass and length E3.19 Sort 2-D and 3-D shapes using properties including lines of symmetry, length, right angles, angles including in rectangles and triangles E3.20 Use appropriate positional vocabulary to describe position and direction inc. eight compass points and including full/half/quarter turns	L1.18 Calculate simple interest in multiples of 5% on amounts of money ✓ L1.19 Calculate discounts in multiples of 5% on amounts of money → L1.20 Convert between units of length, weight, capacity, money and time, in the same system L1.21 Recognise and make use of simple scales on maps and drawings L1.22 Calculate area and perimeter of simple shapes including those that are made up of a combination of rectangles L1.23 Calculate the volumes of cubes and cuboids L1.24 Draw 2-D shapes and demonstrate an understanding of line symmetry & knowledge of the relative size of angles L1.25 Interpret plans, elevations and nets of simple 3-D shapes L1.26 Use angles when describing position and direction, and measure angles in degrees	L2.13 Calculate amounts of money, compound interest, percentage increases, decreases and discounts including tax and simple budgeting ✓Q5, Q6 L2.14 Convert between metric and imperial units of length, weight and capacity using a a) conversion factor and b) conversion graph L2.15 Calculate using compound measures including speed, density and rates of pay L2.16 Calculate perimeters and areas of 2-D shapes including triangles and circles and composite shapes including non-rectangular shapes (formulae given except for triangles and circles) L2.17 Use formulae to find volumes and surface areas of 3-D shapes including cylinders (formulae to be given for 3-D shapes other than cylinders) L2.18 Calculate actual dimensions from scale drawings and create a scale diagram given actual measurements L2.19 Use coordinates in 2-D, positive & negative, to specify the positions of points L2.20 Understand and use common 2-D representations of 3-D objects L2.21 Draw 3-D shapes to include plans and elevations L2.22 Calculate values of angles and/or coordinates with 2-D and 3-D shapes

1. Fundamental mathematical knowledge and skills These must be demonstrated in their own right, **both with and without a calculator**, in addition to being used to solve problems or complete tasks.		
Entry Level 3	**Level 1**	**Level 2**
Handling information and data (HD)		
E3.21 Extract information from lists, tables, diagrams and charts and create frequency tables ✓ Q1a, Q2a, Q3a, Q4 E3.22 Interpret information, to make comparisons and record changes, from different formats including bar charts and simple line graphs E3.23 Organise and represent information in appropriate ways including tables, diagrams, simple line graphs and bar charts	L1.27 Represent discrete data in tables, diagrams and charts including pie charts, bar charts and line graphs L1.28 Group discrete data and represent grouped data graphically L1.29 Find the mean and range of a set of quantities L1.30 Understand probability on a scale from 0 (impossible) to 1 (certain) and use probabilities to compare the likelihood of events L1.31 Use equally likely outcomes to find the probabilities of simple events and express them as fractions	L2.23 Calculate the median and mode of a set of quantities L2.24 Estimate the mean of a grouped frequency distribution from discrete data L2.25 Use the mean, median, mode and range to compare two sets of data L2.26 Work out the probability of combined events including the use of diagrams and tables, including two-way tables L2.27 Express probabilities as fractions, decimals and percentages L2.28 Draw and interpret scatter diagrams and recognise positive and negative correlation

2. Mathematical problem solving (at all levels of Functional Mathematics)

Although underpinning knowledge is tested in its own right, problem solving is a core element of Functional Skills mathematics yet should not obscure or add additional mathematical complexity beyond the level of the qualification. Defining problem solving is a challenge but the attributes below may help. Not all (often just one) of the listed attributes must be present in a single task for it to be considered to be problem solving. ✓ indicates why all or parts of this resource can be considered to be problem solving.
Source: DfE (Feb 2018) https://www.gov.uk/government/publications/functional-skills-subject-content-mathematics.

One or more of the following attributes may be present in a single task for it to be considered problem solving.	
A Tasks that have little or no scaffolding: there is little guidance given to the student beyond a start point and a finish point. Questions do not explicitly state the mathematical process(es) required for the solution. Q4, 11	✓
B Tasks that provide for multiple representations, such as use of a sketch or a diagram as well as calculations.	
C The information is not given in mathematical form or in mathematical language; or there is a need for the results to be interpreted or methods evaluated, for example, in a real-world context. Q1, 2, 3, 4, 5, 6, 7	✓
D Tasks have a variety of techniques that could be used. Q8, 9, 11, 12, 13, 14	✓
E The solution requires understanding of the processes involved rather than just application of the techniques. Q4, 5, 6, 10a, 11, 14	✓

KEY: MCA = appropriate mathematical content area(s). NS = Using numbers and the number system. MS = Using common measures, shape and space. HD = Handling information and data.

[1]A **simple mathematical problem** requires **working through one step or process**. At Entry Level it is expected that students will be able to address individual problems each of which draw upon knowledge and/or skills from **one** MCA (NS, MS or HD). **Context** should be familiar to all students and easily described.

[2]A **straightforward problem** requires students to either work through one step or process **or to work through more than one connected step or process**. Individual problems are based on the knowledge and/or skills in the MCA (i.e. NS, MS or HD). At Level 1 it is expected that the student will be able to address individual problems, some of which **draw upon a combination of any two of the MCA** and require students to make connections between those content areas. **The context** of individual problems at L1 will require some comprehension in order for the student to be able independently to identify and carry out an appropriate mathematical approach.

[3]**A complex problem** requires **a multi-step process, typically requiring planning and working through at least two connected steps or processes**. Individual problems are based on a combination of the knowledge and/or skills from the MCA (NS, MS or HD). At Level 2 it is expected that the student will be able to address individual problems some of which draw upon a combination of **all three MCA** and require students to make connections between those content areas. **The context** of individual problems at L2 will require interpretation and analysis in order for the student to be able independently to identify and carry out an appropriate mathematical process or processes.

<table>
<tr><th colspan="5">Solving mathematical problems, carrying out tasks and decision making.</th></tr>
<tr><th>Entry 1 students are expected to be able to:</th><th>Entry 2 students are expected to be able to:</th><th>Entry 3 students are expected to be able to:</th><th>Level 1 students are expected to be able to:</th><th>Level 2 students are expected to be able to:</th></tr>
<tr><td colspan="3">Use the content knowledge and skills to recognise a [1]simple problem and obtain a solution</td><td colspan="2">Use the content knowledge and skills to recognise and obtain a solution or solutions to a:</td></tr>
<tr><td rowspan="3">E1a. Use given mathematical information and recognise and use simple mathematical terms appropriate to E1</td><td colspan="2" rowspan="2">E2a. E3a. Use given mathematical information including numbers, symbols, simple diagrams and charts</td><td>[2]straightforward problem. ✓</td><td>[3]complex problem.</td></tr>
<tr><td colspan="2">L1a. L2a. Read, understand and use mathematical information and mathematical terms used at this level ✓</td></tr>
<tr><td>E2b. Recognise, understand and use simple mathematical terms appropriate to Entry Level 2</td><td>E3b. Recognise, understand and use simple mathematical terms appropriate to Entry Level 3</td><td colspan="2">L1b. L2b. Address individual problems as described above ✓
L1c. L2c. Use knowledge and understanding to a required level of accuracy ✓</td></tr>
<tr><td colspan="3">E1b. E2c. E3c. Use the methods given above to produce, check and present results that make sense [E3 only: to an appropriate level of accuracy].</td><td></td><td>L2d. Identify suitable operations and calculations to generate results ✓</td></tr>
<tr><td rowspan="3">E1c. Provide a simple explanation for those results.</td><td rowspan="3">E2d. Present appropriate explanations using numbers, measures, simple diagrams, simple charts and symbols appropriate to Entry Level 2.</td><td rowspan="3">E3d. Present results with appropriate explanation using numbers, measures, simple diagrams, charts and symbols appropriate to Entry Level 3. ✓</td><td colspan="2">L1d. L2e. Analyse and interpret answers in the context of the original problem ✓</td></tr>
<tr><td colspan="2">L1e. L2f. Check the sense, and reasonableness, of answers</td></tr>
<tr><td>L1f. Present results with appropriate explanation and interpretation demonstrating simple reasoning to support the process & show consistency with the evidence presented ✓</td><td>L2g. Present results and explain results clearly and accurately demonstrating reasoning to support the process and show consistency with the evidence presented</td></tr>
</table>

Background

This is no. 2 in a series of Reformed Functional Maths and English resources about the UK TV license. No 1 is an Entry Level 2 Reading resource. Further resources will be released in the New Year (2020). Note that Stretch questions are generally beyond L2 Functional Skills content and are included as a bridge for learners that want a challenge, including those that may be moving on to GCSE.

Maggie Harnew, Dec 2nd 2019.

Answer sheet & marking guidance is only available to resource contributors.

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