National Numeracy Tests

PROCEDURAL

7EP17MS

Markscheme

Llywodraeth Cymru
Welsh Government

Markscheme

General marking rules

It is essential that you apply this markscheme, the marking guidance and the general marking rules given below to your own marking, in order for the standardised scores to be valid.

- Incorrect or unacceptable answers are given a mark of 0. No half marks are awarded.
- At the end of each double-page spread of marking, record the total number of marks in the 'total' box in the bottom right-hand corner. Check that the mark recorded does not exceed the maximum number of marks available.
- Once the marking has been completed, add up the total number of marks awarded. This is the total score and should be recorded on the cover of the test booklet and input onto the relevant mark sheet on the school's management information system, together with the details and date of the test taken.
- This data should then be submitted as part of the Welsh National Tests Data Collection (WNTDC). Further details are available from the *National Reading and Numeracy Tests – Test administration handbook 2017* on the Learning Wales website and in *Welsh National Tests Data Collection and reporting arrangements 2016/17* available on the Welsh Government website.
- Markers should record their initials on the cover of the test booklet to assist quality assurance.

Marking the modified tests

For learners using the modified large print or Braille test materials, some questions have been adapted or replaced. When marking a modified large print or Braille test, please use this markscheme alongside the adapted markscheme which is included in the *Notes for teachers* that accompany the modified tests.

Marking guidance

It is important that the tests are marked accurately. The questions and answers below help to develop a common understanding of how to mark fairly and consistently.

Must learners use the answer boxes?

Provided there is no ambiguity, learners can respond anywhere on the page. If there is more than one answer, the one in the answer box must be marked, even if incorrect. However, if the incorrect answer is clearly because of a transcription error (e.g. 65 has been copied as 56), mark the answer shown in the working.

Does it matter if the learner writes the answer differently from that shown in the markscheme?

Numerically equivalent answers (e.g. eight for 8, or two-quarters or 0.5 for half) should be marked as correct unless the markscheme states otherwise.

How should I mark answers involving money?

Money can be shown in pounds or pence, but a missing zero, e.g. £4.7, should be marked as incorrect unless the markscheme states otherwise.

How should I mark answers involving time?

In the real world, specific times are shown in a multiplicity of ways so accept, for example, 02:30, 2.30, half past 2, etc. Do not accept 2.3 as this is ambiguous. The same principle should be used for marking time intervals, e.g. for two and a half hours accept 2.5 but not 2.5pm.

What if the method is wrong but the answer is correct?

Unless the markscheme states otherwise, correct responses should be marked as correct even if the working is incorrect as learners may have started again without showing their revised approach.

What if the learner has shown understanding but has misread information in the question?

For a two (or more) mark item, if an incorrect answer arises from misreading information given in the question and the question has not become easier as a result, then deduct one mark only. For example, if the two-mark question is 86×67 and the learner records 96×67 then gives the answer 6432, one mark should be given. In a one-mark question, no marks can be given.

What should I do about crossed-out work?

Working which has been crossed out and not replaced can be marked if it is still legible.

What is the difference between a numerical error and a conceptual error?

A numerical error is one in which a slip is made, e.g. within 86×67 the learner works out $6 \times 7 = 54$ within an otherwise correct response. A conceptual error is a more serious misunderstanding for which no method marks are available, e.g. if 86×60 is recorded as 516 rather than 5160

What if learners use a method that is not shown within the markscheme?

There can be a wide range of approaches to a question (e.g. long multiplication) and any correct method, however idiosyncratic, is acceptable.

In one-mark questions, the mark should be given for the correct answer, whatever the method used.

In two-mark questions, the correct answer should be given two marks, whatever the method used, unless the markscheme states otherwise. Most two-mark questions give one mark if the answer is incorrect but the learner shows a correct method: a correct method is one that would lead to a correct answer if there were no numerical errors.

7EP17 Procedural test: Markscheme

Q	Marks	Answer	Comments
1	1m	995	
2	1m	54	Accept 53.5 to 54.5 inclusive
3	1m	61	
4	1m	0.9	Accept equivalent decimals but do not accept equivalent fractions
5	1m	9	
6	1m	550cm	
7i	1m	0.68 or equivalent	
7ii	1m	7	
8	1m	£8.51 more	
9i	1m	22	Do not accept 2 × 11
9ii	1m	60	
10	1m	1500 grams	
11i	1m	7 minutes	Accept 6.8 to 7.2 minutes inclusive
11ii	1m	14 minutes Or Correctly subtracts their answer to 11i from 21 (± 0.2) minutes, provided their answer to 11i is less than 21 minutes	Example: From an answer of 5 minutes in 11i, accept 16 minutes
12	1m	Ten thousand	Accept 10 thousand but not one hundred squared or 10 000

Q	Marks	Answer	Comments
13	1m	1.7m or equivalent	
14	1m	$\frac{1}{4}$	Accept equivalent fractions or decimals
15	1m	24cm	
16	2m	5696	
	Or 1m	Shows 5340 Or Shows 356 Or Shows any two of 3200, 2240 and 256 Or Incorrect answer, but shows a method that would lead to 5696 if calculated correctly, with not more than one numerical error	Example of a correct method: $32 \times 178 = 16 \times 356$ $= 8 \times 724$ (error) $= 4 \times 1448$ $= 2 \times 2896$ $= 5792$
17	1m	13.7	Do not accept equivalent fractions or decimals
18	1m	£72	Accept £72.00 but not £71.88 or £71.90
19	1m	£6(.00)	
20	1m	$98 = (4879 \textcircled{+} 21) \textcircled{\div} 50$	
21	1m	60 cakes	
22	1m	$\frac{2}{3}$ or equivalent fraction	Accept any fraction between $\frac{62}{100}$ and $\frac{72}{100}$ inclusive, e.g. $\frac{7}{10}$ Do not accept equivalent decimals or percentages
23	1m	04:31:98	Accept 4:31:98

Q	Marks	Answer	Comments
24	2m	56	
	Or 1m	Incorrect answer, but shows a method that would lead to 56 if calculated correctly, with not more than one numerical error	Examples of a correct method: $35 \times 160 = 5800$ (error), $5800 \div 100 = 58$ $16 + 16 + 16 + 8 = 54$ (error)
25	1m	£454(.00)	
26	2m	12	
	Or 1m	Shows 1200 Or Incorrect answer, but shows a method that would lead to 12 if calculated correctly, with not more than one numerical error	Example of a correct method: $40^2 = 1500$ (error) $20^2 = 400$ $1500 - 400 \div 100 = 11$
27	1m	$18cm^2$	
28	2m	160cm	
	Or 1m	Shows 500 and 340 Or Incorrect answer, but shows a method that would lead to 160cm if calculated correctly, with not more than one numerical error	Examples of a correct method: $5 \times 100 - 4 \times 85$ $5 \times (100 - 85) + 85$

National Numeracy Tests

PROCEDURAL

7EP17

First name _____

Last name _____

School _____

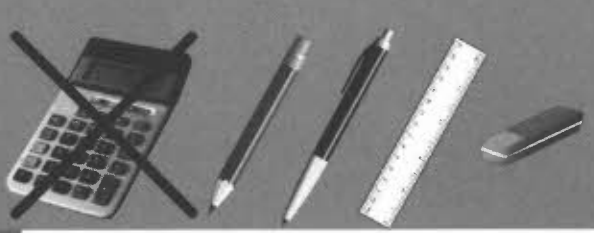
Class _____

Date of birth ○○ ○○ ○○○○

Date of test ○○ ○○ 2017

Total score ☐ (maximum 35)

150289



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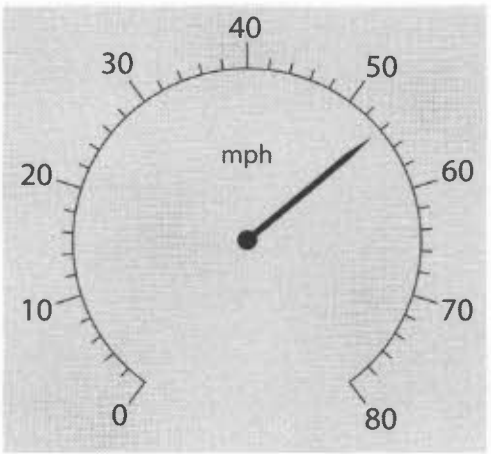
1 Write in figures the number that is **five less** than one thousand.

1m

2



The arrow shows a speed of ☐ mph.

1m

3 89 + ☐ = 150

1m

4 Write $\frac{9}{10}$ as a decimal. ☐

1m

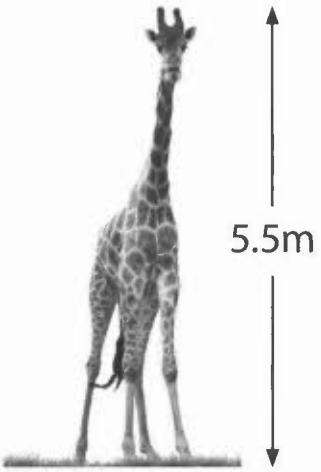
5 Steffan thinks of a positive number.

When he squares it, the answer is 81

What was his number?

1m

6



How tall is the giraffe in centimetres? cm

1m

7 Subtract 0.32 from 1

1m

Add 22 to –15

1m

TOTAL 8m

8

Shorts
£12.99

Jeans
£21.50

The jeans cost more than the shorts.

How much more?

£ more

1m

9 11 × 11 − 9 × 11 = ☐

1m

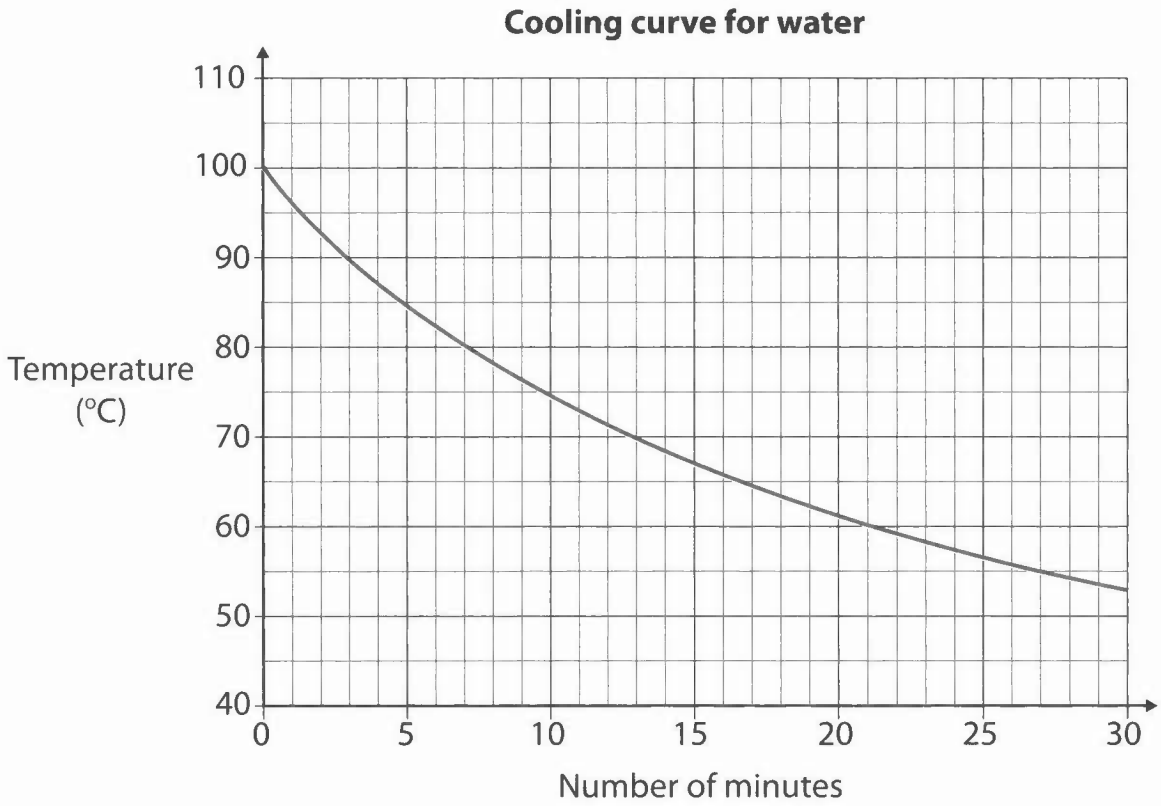
☐ × 0.1 = 6

1m

10 1.5 kilograms = ☐ grams

1m

11



At the start the temperature is 100°C.

It takes ☐ minutes to fall to 80°C.

1m

Then it takes **another** ☐ minutes to fall to 60°C.

1m

12 What is one hundred multiplied by one hundred?

Write your answer in **words**.

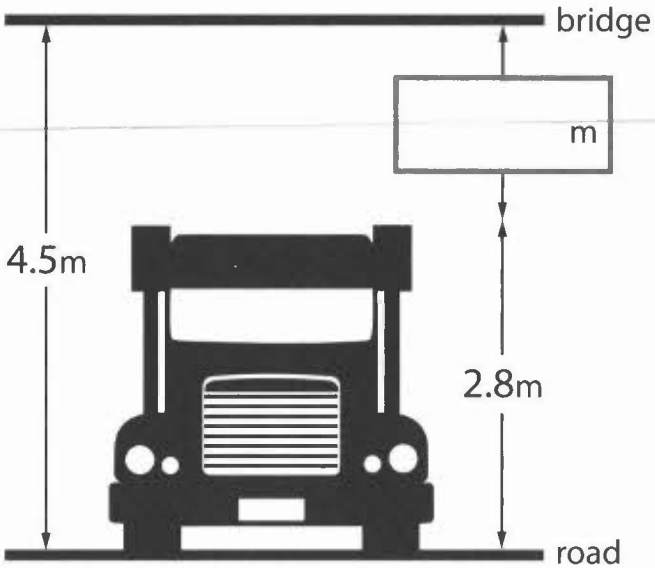
☐

1m

TOTAL

7m

13 Write the missing height.



1m

14 Here is part of a recipe for making bread:

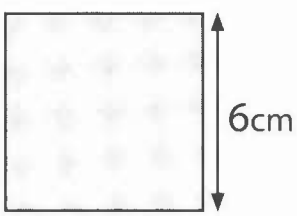
use brown flour and white flour in the ratio 1 : 3

What **fraction** of the total flour is **brown** flour?

1m

15 Work out the **perimeter** of the square.

Not drawn accurately



cm

1m

16 Multiply 178 by 32

2m

17 Round 13.679 to **one** decimal place.

1m

18

Watch films online for
£5.99 per month

To the **nearest £**, how much does this cost per year?

£

1m

TOTAL

7m

19

Cost to borrow money:

pay 2% interest each month

Ffion borrows £300 for one month.

How much interest must she pay?

£

1m

20

98 (×) 50 (−) 21 = 4879

Use the information in the box to work out the missing symbols below.

Choose from these symbols: + , − , × and ÷

98 = (4879 ◯ 21) ◯ 50

1m

21

Cakes:

260g of flour makes 16 cakes

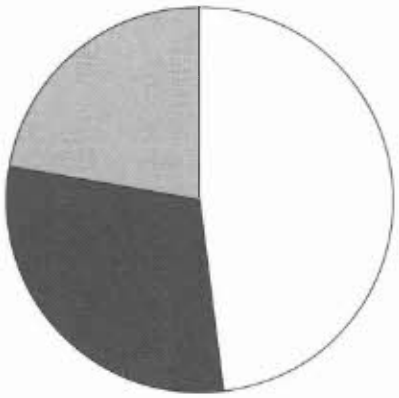
To the **nearest ten**, how many cakes can be made with 1kg of flour?

cakes

1m

22 The same people were asked in 2000 and 2015 about their favourite ways to listen to music.

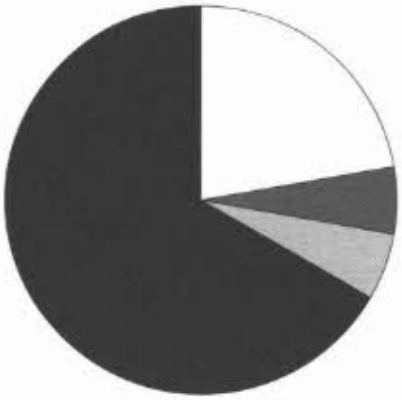
In 2000



Key:

- Radio
- CDs
- Other
- Downloads

In 2015



Write the missing **fraction** below.

In 2000 about $\frac{1}{2}$ of the people said 'radio'.

In 2015 about ☐ of the people said 'downloads'.

1m

23 Emily runs 1km races.

Her best time in minutes, seconds and hundredths of seconds is 04:32:01

In her next race Emily is **three-hundredths** of a second **faster**.

What is her new best time?

☐ : ☐ : ☐

1m

TOTAL

5m

24 Work out 35% of 160

2m

25 Cost of gas: 4.54 pence for each unit (kWh) used

Mr Garside uses 10 000 units in one year.

What is the total cost?

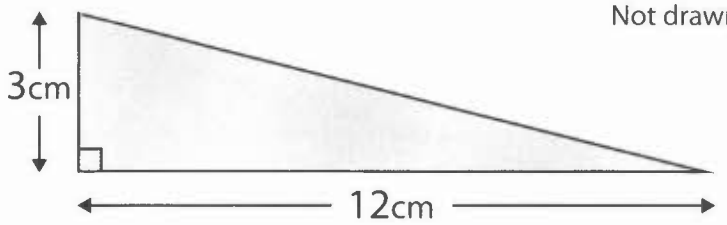
£

1m

26 Work out $\frac{40^2 - 20^2}{10^2}$

2m

27 Work out the area of the triangle.



Not drawn accurately

cm^2

1m

28

The mean height of four children is 85cm.

The mean height of the teacher **and** the four children is 100cm.

What is the height of the teacher?

cm

2m

TOTAL

8m