



I ❤️ maths @PCSAMaths



Cycle 3 Homework

Subject: Maths

Year 10 Set 3

Name: _____

Tutor Group: _____

Maths Teacher: _____

Learning Cycle 3

February 2019	11	12	13	14	15	Teaching week 1
	18	19	20	21	22	Half Term
	25	26	27	28	1	Teaching week 2
March 2019	4	5	6	7	8	Teaching week 3
	11	12	13	14	15	Teaching week 4
	18	19	20	21	22	Teaching week 5
	25	26	27	28	29	Teaching week 6
April 2019	1	2	3	4	5	Teaching week 7
	8	9	10	11	12	Easter Holiday
	15	16	17	18	19	Easter Holiday
	22	23	24	25	26	Assessment week
May 2019	29	30	1	2	3	Super Teaching week

- During the Assessment Week (week 8), Year 9 students will sit a test covering the work from that cycle. Year 10 students will sit a GCSE paper. Revision lists can be found later in this booklet.
- The questions in this homework booklet are mainly consolidation of work covered in previous years and of key skills. However, if there are any topics that students are not understanding there are Hegarty Maths video clips to watch that explain that topic. Please see the opposite page for further information.
- In week 7 teachers will be checking that all 4 Hegarty Maths revision templates have been completed. The idea is that these are completed throughout the cycle and not all left until week 7. Please see the 'Revision Guide' document to inform what topics should be covered as part of this revision.
- Alongside completing the tasks in this booklet we also expect students to be making regular use of the Hegarty Maths website for independent study.

This can be to go over things covered in class, to revise for upcoming tests or to work on areas of weakness that were identified in previous tests.

**REMEMBER: THERE WILL BE 4 HEGARTY MATHS REVISION
PAGES CHECKED IN WEEK 7.**

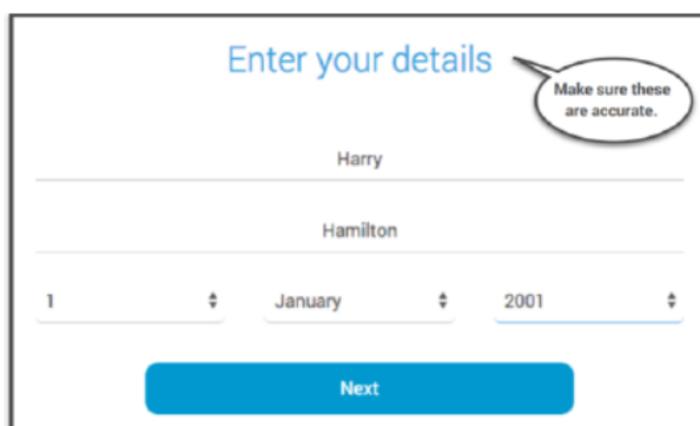
**THESE MUST ALL BE COMPLETED AND THE ONLINE QUIZZES
MUST ALSO BE COMPLETE.**

Cycle 3 Homework Help

Please use the clip numbers in the table below to look up areas of weakness on the Hegarty Maths website.

Question	Topic	Hegarty Maths number
1, 2	Solving linear equations	178-186
3, 4	Expanding and simplifying	160-161
5, 6	Multiplication – decimals	48
7, 8	Calculating a percentage of a quantity	84-85
9, 10	Dividing in a given ratio	332-334
11, 12	Order of operations	24, 44
13, 14	Using the nth term of a sequence	249-250
15, 16	Factorising	168-169
17, 18	Types of numbers and product of primes	27-30, 33
19, 20	Arithmetic with money	743-754

To log in to Hegarty Maths, go to <https://hegartymaths.com/> and select 'Student Log in'.



Enter your details

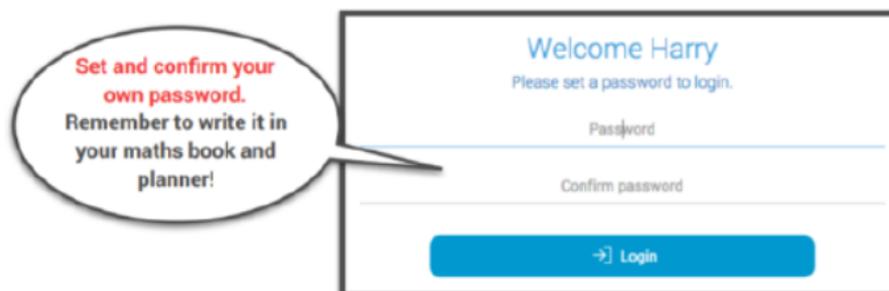
Make sure these are accurate.

Harry

Hamilton

1 January 2001

Next



Welcome Harry

Please set a password to login.

Password

Confirm password

Login

Set and confirm your own password. Remember to write it in your maths book and planner!

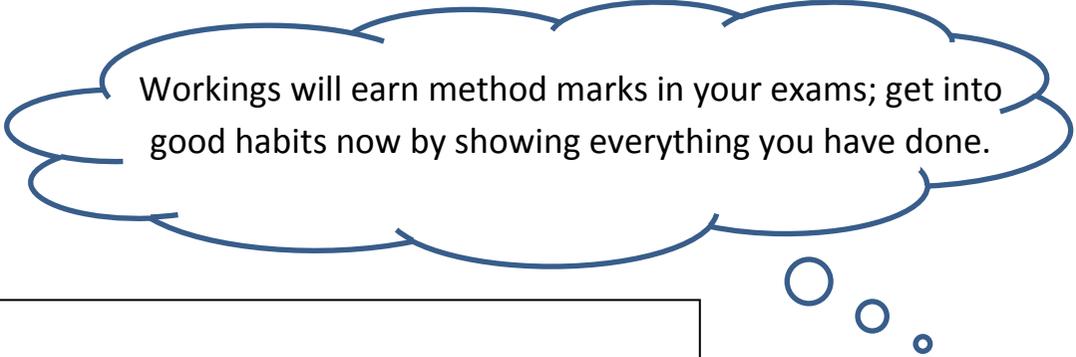
Teachers do not have access to student passwords. If you forget your password please click on 'request a password reset' and speak to your teacher during your next lesson.

Question 1 Solve $2x - 6 = -12$	Question 2 Solve $11x - 6 = 10.5$	Question 3 $4(2a - b) - 3(a + 5b)$	Question 4 $5(a - 4b) + 2(2a + 2b)$
Question 5 Work out $2.3 \times 9 =$	Question 6 Work out $103 \div 8 =$	Question 7 Find 60% of £1000	Question 8 Find 20% of £600
Question 9 Divide £28 in the ratio 5 : 2	Question 10 Divide £64 in the ratio 3 : 5	Question 11 Work out $6 \times (11 - 3)$	Question 12 Work out $5 \times 2 + 3$
Question 13 If the nth term of a sequence is $7n + 2$ what is the 10th term?	Question 14 If the nth term of a sequence is $3n + 5$ what is the 8th term?	Question 15 Factorise $10 - 25x$	Question 16 Factorise fully $30x^3 + 20x^2$
Question 17 Express 21 as a product of prime factors	Question 18 Express 330 as a product of prime factors	Question 19 How much change would you get from £10 if you spent £1.43 and £1.15?	Question 20 What is $£10 - 2 \times £1.44$?

SKILLS CHECK

Score

You must show your workings here:



Workings will earn method marks in your exams; get into good habits now by showing everything you have done.

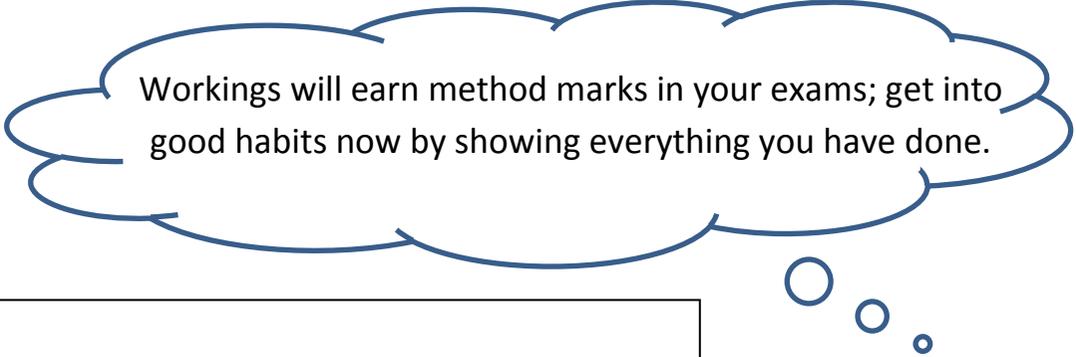
Parent/Carer Comment:

Question 1 Solve $4x + 2 = 2x + 14$	Question 2 Solve $3(7x - 2) = -27$	Question 3 $5(a - 2b) + 2(a + 5b)$	Question 4 $5(4a - 3b) + 2(a - 3b)$
Question 5 Work out $7.3 \times 6.3 =$	Question 6 Work out $85 \div 4 =$	Question 7 Find 35% of £380	Question 8 Find 75% of £420
Question 9 Divide £132 in the ratio 3 : 8	Question 10 Divide £112 in the ratio 5 : 11	Question 11 Work out $3 + 4 \times 2$	Question 12 Work out $2 \times (6 + 2) \times 5$
Question 13 If the nth term of a sequence is $7n - 1$ what is the 6th term?	Question 14 If the nth term of a sequence is $12n + 2$ what is the 7th term?	Question 15 Factorise $21 - 9x$	Question 16 Factorise fully $24x + 16x^2$
Question 17 Express 231 as a product of prime factors	Question 18 Express 24 as a product of prime factors	Question 19 How much change would you get from £10 if you spent £2.27 and £2.77?	Question 20 What is $£5 - 2 \times £0.81$?

SKILLS CHECK

Score

You must show your workings here:



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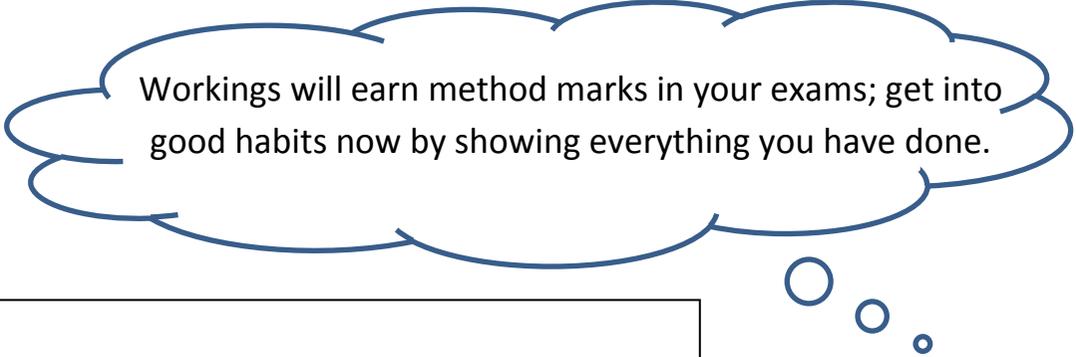
Parent/Carer Comment:

Question 1 Solve $4x - 4 = 2x - 6$	Question 2 Solve $6x - 2 = 5x - 5$	Question 3 $5(4a + 2b) - 3(2a + b)$	Question 4 $3(a - 4b) - 2(a + 4b)$
Question 5 Work out $68 \times 1.1 =$	Question 6 Work out $86 \div 5 =$	Question 7 Find 95% of £100	Question 8 Find 50% of £40
Question 9 Divide £143 in the ratio 2 : 11	Question 10 Divide £144 in the ratio 11 : 7	Question 11 Work out $12 \times (8 - 6)$	Question 12 Work out $6 + 6 \times 3^2$
Question 13 If the nth term of a sequence is $10n - 6$ what is the 11th term?	Question 14 If the nth term of a sequence is $4n + 3$ what is the 6th term?	Question 15 Factorise $35x + 55$	Question 16 Factorise fully $12x^3 - 30x^2$
Question 17 Express 40 as a product of prime factors	Question 18 Express 126 as a product of prime factors	Question 19 How much change would you get from £10 if you spent £2.39 and £3.98?	Question 20 What is $£10 - 4 \times £1.91$?

SKILLS CHECK

Score

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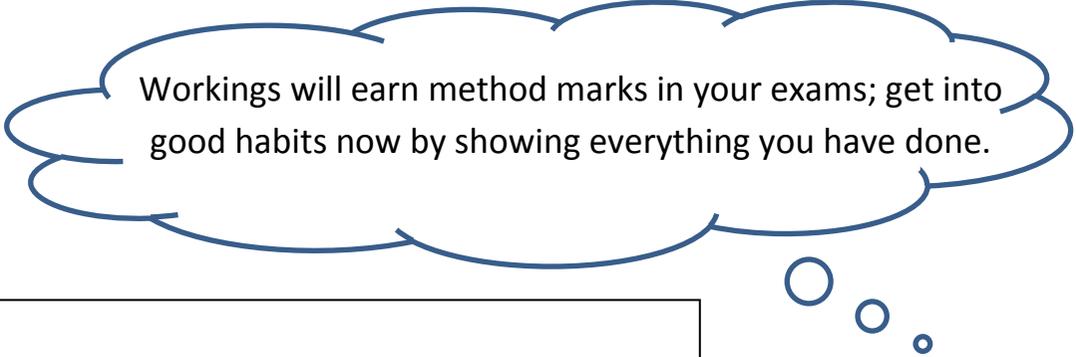
Parent/Carer Comment:

<p>Question 1 Solve $4(10x + 5) = 260$</p>	<p>Question 2 Solve $2(6x - 5) = -58$</p>	<p>Question 3 $2(3a + 2b) - 2(2a + 5b)$</p>	<p>Question 4 $2(a + 5b) + 2(2a - 5b)$</p>
<p>Question 5 Work out $58 \times 0.8 =$</p>	<p>Question 6 Work out $56 \div 5 =$</p>	<p>Question 7 Find 30% of £560</p>	<p>Question 8 Find 30% of £920</p>
<p>Question 9 Divide £140 in the ratio 3 : 11</p>	<p>Question 10 Divide £143 in the ratio 11 : 2</p>	<p>Question 11 Work out $3 \times 4 + 5$</p>	<p>Question 12 Work out $2 \times (5 + 4) \times 5$</p>
<p>Question 13 If the nth term of a sequence is $6n + 4$ what is the 9th term?</p>	<p>Question 14 If the nth term of a sequence is $5n + 2$ what is the 5th term?</p>	<p>Question 15 Factorise $4x + 22$</p>	<p>Question 16 Factorise fully $24x - 8x^2$</p>
<p>Question 17 Express 32 as a product of prime factors</p>	<p>Question 18 Express 112 as a product of prime factors</p>	<p>Question 19 How much change would you get from £10 if you spent £2.50 and £3.99?</p>	<p>Question 20 What is $£10 - 3 \times £1.38$?</p>

SKILLS CHECK

Score

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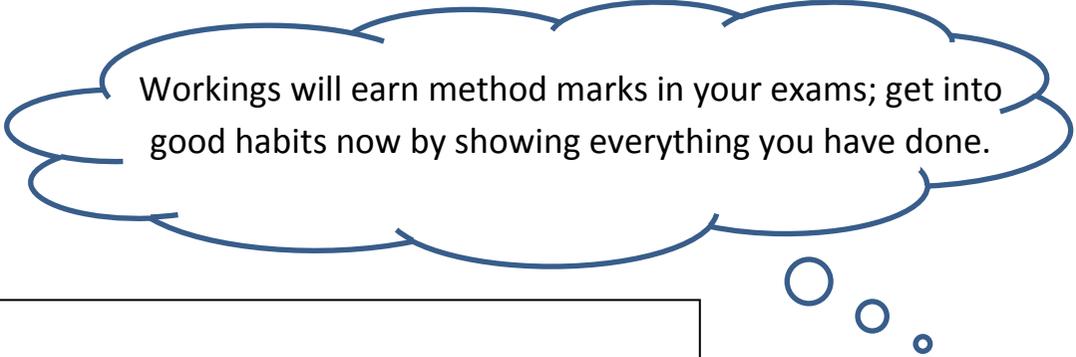
Parent/Carer Comment:

Question 1 Solve $4x + 1 = 3x - 1$	Question 2 Solve $7x = 2x + 30$	Question 3 $3(2a - 4b) - 4(2a - 3b)$	Question 4 $4(2a + 3b) + 2(2a - 5b)$
Question 5 Work out $8.3 \times 8.1 =$	Question 6 Work out $121 \div 4 =$	Question 7 Find 45% of £520	Question 8 Find 50% of £740
Question 9 Divide £96 in the ratio 3 : 5	Question 10 Divide £84 in the ratio 5 : 2	Question 11 Work out $10 \times (12 - 4)$	Question 12 Work out $3 + 12 \times 2^2$
Question 13 If the nth term of a sequence is $10n$ what is the 12th term?	Question 14 If the nth term of a sequence is $4n - 2$ what is the 5th term?	Question 15 Factorise $4x - 6$	Question 16 Factorise fully $16y^2 - 8y^3$
Question 17 Express 16 as a product of prime factors	Question 18 Express 21 as a product of prime factors	Question 19 How much change would you get from £10 if you spent £2.35 and £3.13?	Question 20 What is $£10 - 4 \times £1.15$?

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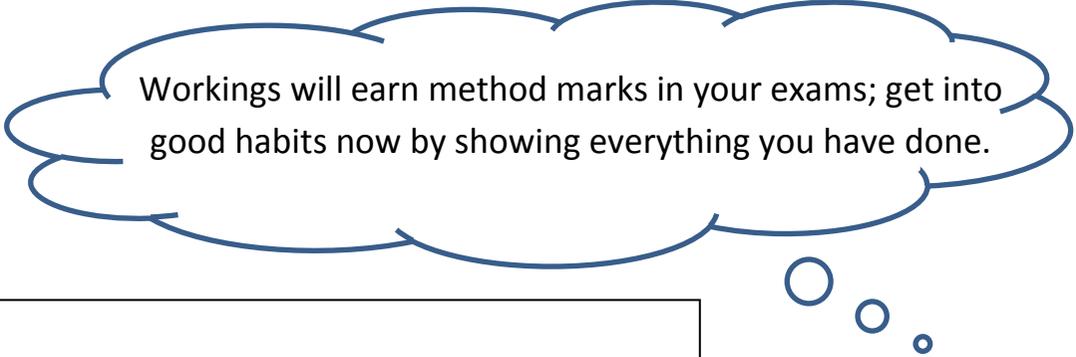
Parent/Carer Comment:

Question 1 Solve $3(7x - 4) = 93$	Question 2 Solve $3x + 3 = 2x + 2$	Question 3 $2(3a + 5b) - 5(2a + 2b)$	Question 4 $3(3a + 3b) - 3(a + 3b)$
Question 5 Work out $3.4 \times 4.6 =$	Question 6 Work out $49 \div 2 =$	Question 7 Find 35% of £940	Question 8 Find 50% of £980
Question 9 Divide £121 in the ratio 3 : 8	Question 10 Divide £32 in the ratio 5 : 3	Question 11 Work out $8 + 8 \times 3$	Question 12 Work out $9 \times (10 + 4^2)$
Question 13 If the nth term of a sequence is $5n + 6$ what is the 6th term?	Question 14 If the nth term of a sequence is $9n$ what is the 5th term?	Question 15 Factorise $30 - 18x$	Question 16 Factorise fully $9x + 45x^2$
Question 17 Express 48 as a product of prime factors	Question 18 Express 110 as a product of prime factors	Question 19 How much change would you get from £10 if you spent £2.81 and £0.99?	Question 20 What is $£5 - 2 \times £0.68$?

SKILLS CHECK

Score

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Parent/Carer Comment:

Revision – Week 7

In Week 7 we will collect 4 pages of revision.

These can be completed at any time during the cycle, but they will all be checked in Week 7.

Please plan your time carefully so that you meet this deadline.

You should choose topics from the list opposite which details what has been covered during this cycle.

Getting in to good revision habits is vital for success in GCSE maths.

Revision is most effective when it involves ‘doing’ – this approach is proven to aid retention and recall of information. This is why we are asking that you;

- Take notes from the videos on Hegarty Maths, writing down key information and examples.
- Write down your workings out for each quiz that you complete and mark this as you go, noting corrections for any questions that you got wrong.
 - Record your quiz score and rate your confidence level.

YOU MUST COMPLETE THE ONLINE QUIZ!

If you can make the above a habit revision will be much easier for you when you are preparing for exams. We have provided an example of what good revision looks like.

Hegarty Maths also tracks everything that you do, so if you complete lots of revision from Y7 then by the time you get to Y11 it will be able to tell you your weaknesses; these can then form a big part of your final revision plan. The ‘Fix Up 5’ feature will give you questions and support on these.

As ever, if you have any questions please see your teacher well before the deadline.

Year 10 Cycle 3 Assessment – Sets 3-6

The table below contains topics we would advise revising before the cycle 3 assessment.

Topic	Hegarty Maths
Basic probability	349
Parts of a circle	592
Place value	13
Solving equations	178, 179
Simplifying Introduction	156, 157
Factorising single brackets	168, 169
Bar charts	425
Triangle properties	557
Inequalities	267
Splitting by ratio	332
Money problems	752-754
Stem & Leaf diagram	430-432
Scale diagrams	864-868
Speed, distance, time	716
Simple interest	93
Proportion	339-342
Simultaneous equations	190/191
Gradient of a line	201
Exchange rate	707
Surface area of a cuboid	584
Column Vectors	622-625
Trigonometry	509-510
Percentages	90
Index Laws	105

Hegarty Maths Revision

Topic: 30 : Prime Factorisation 2	Have you checked through the required 'Building Blocks'? <input checked="" type="checkbox"/> 29
Notes from the video: Any composite number can be uniquely expressed as a product of primes. Product means times/multiply. Prime numbers 2, 3, 5, 7, 11, 13, 17, 19, ... Divisibility tests Divisible by 2 number ends in 0, 2, 4, 6, 8 Divisible by 3 sum of digits is divisible by 3 Divisible by 5 ends in 0, 5 Write 140 as a product of primes <div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center;"> $\begin{array}{c} 140 \\ / \quad \backslash \\ (2) \quad \times \quad 70 \\ \quad \quad / \quad \backslash \\ \quad \quad (2) \quad \times \quad 35 \\ \quad \quad \quad / \quad \backslash \\ \quad \quad \quad (5) \quad \times \quad (7) \end{array}$ </div> <div style="margin-left: 20px;"> $140 = 2 \times 2 \times 5 \times 7$ in index form $140 = 2^2 \times 5 \times 7$ </div> </div>	

Quiz questions (showing workings and marking work as you go):	
1. $125 = 5^3$ ✓ 2. $81 = 3^4$ ✓ 3. $72 = 2^3 \times 3^2$ ✓ <div style="text-align: center;"> $\begin{array}{c} 72 \\ / \quad \backslash \\ (2) \quad \times \quad 36 \\ \quad \quad / \quad \backslash \\ \quad \quad (2) \quad \times \quad 18 \\ \quad \quad \quad / \quad \backslash \\ \quad \quad \quad (2) \quad \times \quad 9 \\ \quad \quad \quad \quad / \quad \backslash \\ \quad \quad \quad \quad (3) \quad (3) \end{array}$ </div> <div style="border: 1px solid black; border-radius: 15px; padding: 5px; width: fit-content; margin: 10px auto;"> Use X on online keyboard not letter x </div>	6. $12 = 2^2 \times 3$ ✓ 7. $20 = 2^2 \times 5$ ✓ 8. $48 = 2^4 \times 3$ ✓ <div style="text-align: center;"> $\begin{array}{c} 48 \\ / \quad \backslash \\ (2) \quad \times \quad 24 \\ \quad \quad / \quad \backslash \\ \quad \quad (2) \quad \times \quad 12 \\ \quad \quad \quad / \quad \backslash \\ \quad \quad \quad (2) \quad \times \quad 6 \\ \quad \quad \quad \quad / \quad \backslash \\ \quad \quad \quad \quad (2) \quad (3) \end{array}$ </div>
4. $200 = 2^3 \times 5^2$ ✓ 5. $24 = 2^3 \times 3$ ✓	9. $168 = 2^3 \times 3 \times 7$ ✓ 10. $36 = 2^2 \times 3^2$ ✓ <div style="text-align: center;"> $\begin{array}{c} 168 \\ / \quad \backslash \\ (2) \quad \times \quad 84 \\ \quad \quad / \quad \backslash \\ \quad \quad (2) \quad \times \quad 42 \\ \quad \quad \quad / \quad \backslash \\ \quad \quad \quad (2) \quad \times \quad 21 \\ \quad \quad \quad \quad / \quad \backslash \\ \quad \quad \quad \quad (3) \quad (7) \end{array}$ </div>

Quiz score: 100 %	My confidence level: <input checked="" type="radio"/> 😊 <input type="radio"/> 😐 <input type="radio"/> ☹️
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Hegarty Maths Revision

Checklist: 1. Watched video and taken notes; 2. Completed the quiz, writing down your workings and score; 3. Completed the 'My confidence level' section.

Topic:	Have you checked through the required 'Building Blocks'? <input type="checkbox"/>
Notes from the video:	
Quiz questions (showing workings and marking work as you go): You MUST have completed the quiz online as well.	
Quiz score: %	My confidence level:   

Remember to see your teacher if you have watched the video on Hegarty Maths and still do not understand.

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