WCSA

Mathematics

Home Learning Book – Learning Cycle 1

Mathematics Year 11 Set 4A

Name: _____ Tutor Group: ___

Maths Teacher(s): _____

Learning Cycle 1

	Cycle.Week						
Sep 2018	1.1	3	4	5	6	7	
	1.1	10	11	12	13	14	Week 1 HW due
	1.2	17	18	19	20	21	Week 2 HW due
	1.3	24	25	26	27	28	Week 3 HW due
Oct 2018	1.4	1	2	3	4	5	Week 4 HW due
	1.5	8	9	10	11	12	Week 5 HW due
	1.6	15	16	17	18	19	Week 6 HW due
		22	23	24	25	26	Half Term
		29	30	31	1	2	Half Term
Nov 2018	1.7	5	6	7	8	9	Week 7 Hegarty Revision due (×4)
	1.8	12	13	14	15	16	Assessment Week
	1.9	19	20	21	22	23	Super Teaching Week

- During the Assessment Week (week 8), students will be assessed on the material that they have covered the previous seven weeks.

- The questions in the homework are mainly consolidation of work covered in previous years and of key skills. However, if there are any topics 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.

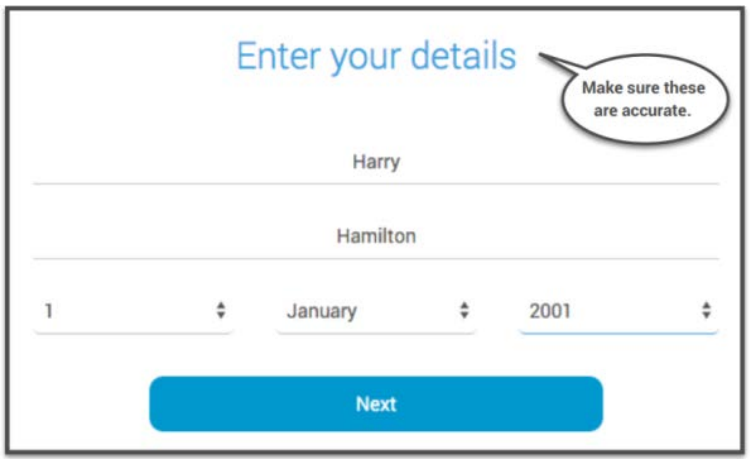
Cycle 1 Homework help

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

Question	Topic	Hegarty Maths clip number
1, 2	Identifying types of numbers	27, 33, 99, 100
3, 4	Addition – decimals	47
5, 6	Addition and subtraction – negative numbers	39, 40
7, 8	Multiplication with integers	21
9, 10	Multiplication with decimals	48
11, 12	Order of operations	24, 44, 120, 150
13, 14	Simplifying – collecting like terms	156, 157
15, 16	Solving linear equations	178, 179
17, 18	Averages	404, 405, 409
19, 20	Area and perimeter	549, 550, 553, 557

To log in to Hegarty Maths, go to https://hegartymaths.com/

Click on the green Log in button and select 'Student Log in'.



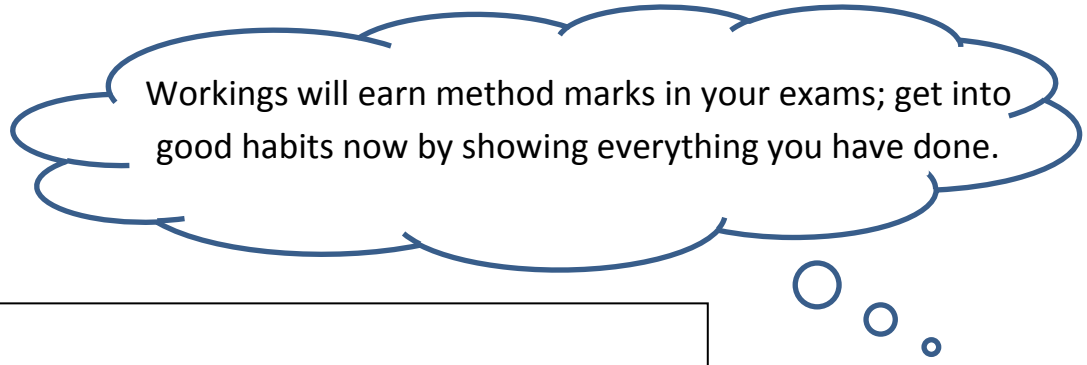
Teachers do not have access to student passwords. If you forget your password please click on 'request a password reset' and speak to your teacher during your next lesson.

Question 1 What is the 9th multiple of 15?	**Question 2** List the factors of 49	**Question 3** Work out 76.5 + 25.2 =	**Question 4** Work out 5.56 + 3.29 =
Question 5 Work out 10 + -5 =	**Question 6** Work out -8 + 6 =	**Question 7** Work out 29 × 34 =	**Question 8** Work out 40 × 30 =
Question 9 Work out 12 × 0.4 =	**Question 10** Work out 5 × 0.4 =	**Question 11** Work out 4 × 4 + 3	**Question 12** Work out 11 × (4 + 3)
Question 13 Simplify 10a + 3b - 8a - 4b	**Question 14** Simplify 6a + 2b + 5a - 6b	**Question 15** Solve 13x + 3 = -10	**Question 16** Solve 9x - 4 = 23
Question 17 Find the median 19, 15, 9, 10, 25	**Question 18** Find the median 13, 24, 18, 13, 21	**Question 19** Calculate the perimeter of a square with side length 11 cm	**Question 20** Calculate the area of a rectangle with height 14 cm and length 9 cm

SKILLS CHECK

Score

You must show your workings here:



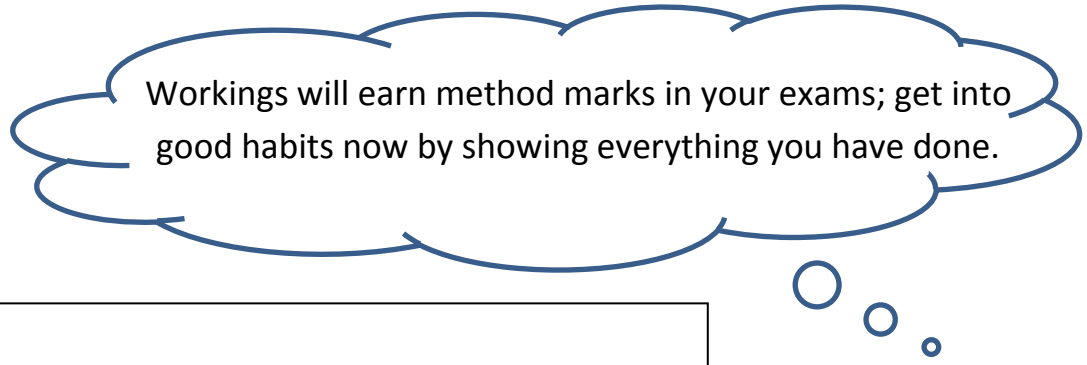
Parent/Carer Comment:

Question 1 What is the 15th square number?	**Question 2** List the factors of 25	**Question 3** Work out 42.4 + 32.9 =	**Question 4** Work out 6.27 + 6.01 =
Question 5 Work out 10 - 1 =	**Question 6** Work out -2 + 1 =	**Question 7** Work out 69 × 78 =	**Question 8** Work out 82 × 61 =
Question 9 Work out 2 × 0.3 =	**Question 10** Work out 4 × 1.2 =	**Question 11** Work out 4 × 4 + 5	**Question 12** Work out 54 - 8 × 2
Question 13 Simplify 6a + 4b + 3a + 7b	**Question 14** Simplify 9a + 3b + 3a + 6b	**Question 15** Solve 9x + 5 = 59	**Question 16** Solve 3x - 4 = 11
Question 17 Calculate the mean 18, 3, 6, 10, 38	**Question 18** Calculate the mean 14, 8, 10, 4, 44	**Question 19** Calculate the perimeter of a square with side length 9 cm	**Question 20** Calculate the perimeter of a rectangle with height 7 cm and length 9 cm

SKILLS CHECK

Score

You must show your workings here:



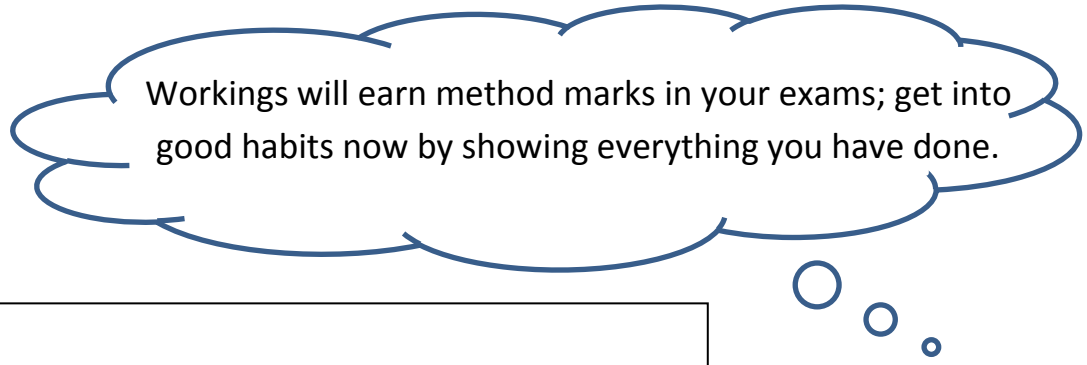
Parent/Carer Comment:

Question 1 What is the 6th cube number?	**Question 2** What is the 5th cube number?	**Question 3** Work out 66.5 + 45.2 =	**Question 4** Work out 8.2 + 7.15 =
Question 5 Work out 7 - -3 =	**Question 6** Work out 6 + -7 =	**Question 7** Work out 82 × 20 =	**Question 8** Work out 73 × 20 =
Question 9 Work out 9 × 0.4 =	**Question 10** Work out 12 × 0.7 =	**Question 11** Work out 5 × 4 - 3	**Question 12** Work out 9 + 5 × 5
Question 13 Simplify 8a + 4b - 7a - 3b	**Question 14** Simplify 9a + 5b - 7a + 6b	**Question 15** Solve 11x + 2 = 68	**Question 16** Solve 8x + 4 = -12
Question 17 Find the median 13, 22, 21, 25, 15	**Question 18** Find the median 10, 11, 14, 20, 10	**Question 19** Calculate the perimeter of a regular pentagon with side length 7 cm	**Question 20** Calculate the area of a square with side length 12 cm

SKILLS CHECK

Score

You must show your workings here:



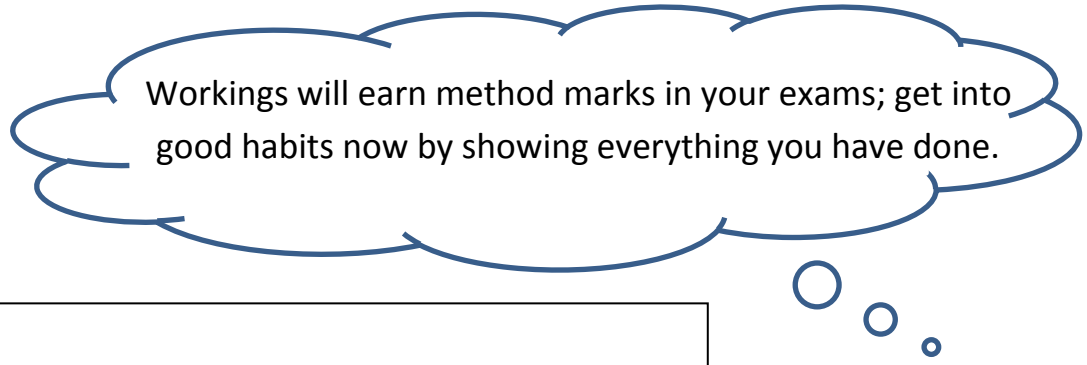
Parent/Carer Comment:

Question 1 What is the 10th multiple of 7?	**Question 2** What is the 7th multiple of 5?	**Question 3** Work out 47.8 + 22.7 =	**Question 4** Work out 7.32 + 4.76 =
Question 5 Work out -8 + -3 =	**Question 6** Work out -3 - 10 =	**Question 7** Work out 69 × 55 =	**Question 8** Work out 45 × 30 =
Question 9 Work out 7 × 1.2 =	**Question 10** Work out 11 × 0.2 =	**Question 11** Work out 2 + 9 × 5	**Question 12** Work out 34 - 8 × 4
Question 13 Simplify 5a + 4b + 8a + 4b	**Question 14** Simplify 9a + 2b - 6a + 5b	**Question 15** Solve 11x + 6 = 28	**Question 16** Solve 11x + 4 = 81
Question 17 Calculate the mean 18, 7, 18, 11, 21	**Question 18** Find the median 24, 11, 25, 6, 8	**Question 19** Calculate the area of a square with side length 9 cm	**Question 20** Calculate the perimeter of a regular pentagon with side length 8 cm

SKILLS CHECK

Score

You must show your workings here:



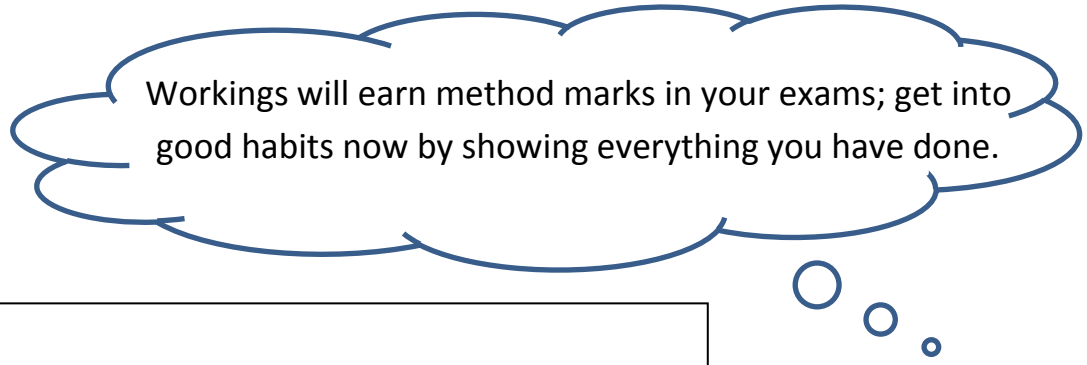
Parent/Carer Comment:

Question 1 What is the 5th cube number?	**Question 2** What is the 3rd cube number?	**Question 3** Work out 22.6 + 13.2 =	**Question 4** Work out 9.39 + 2.21 =
Question 5 Work out -5 + -9 =	**Question 6** Work out -8 - 7 =	**Question 7** Work out 67 × 48 =	**Question 8** Work out 33 × 78 =
Question 9 Work out 70 × 0.1 =	**Question 10** Work out 11 × 0.3 =	**Question 11** Work out 11 + 9 × 5	**Question 12** Work out 59 - 5 × 2
Question 13 Simplify 7a + 5b + 6a + 8b	**Question 14** Simplify 9a + 5b - 8a + 8b	**Question 15** Solve 3x - 4 = 8	**Question 16** Solve 11x - 3 = 52
Question 17 Find the median 16, 15, 15, 15, 6	**Question 18** Find the median 14, 16, 11, 23, 10	**Question 19** Calculate the area of a square with side length 12 cm	**Question 20** Calculate the perimeter of a square with side length 15 cm

SKILLS CHECK

Score

You must show your workings here:



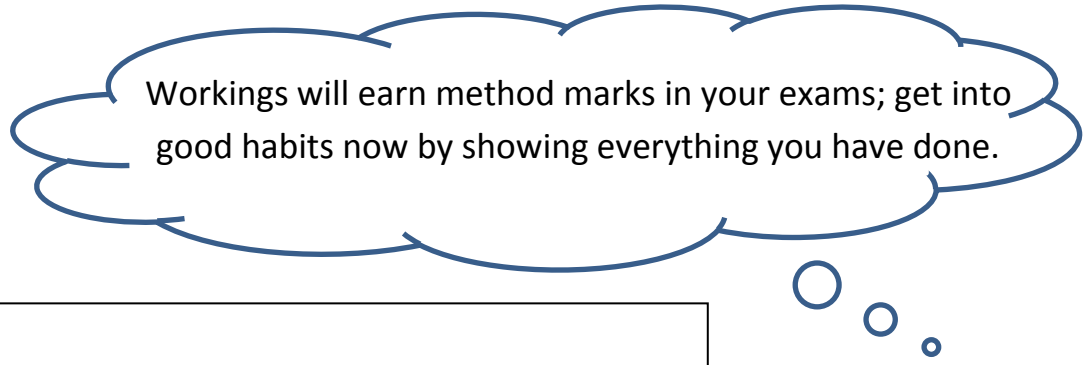
Parent/Carer Comment:

Question 1 What is the 12th square number?	**Question 2** What is the 9th square number?	**Question 3** Work out 96.2 + 3.6 =	**Question 4** Work out 5.07 + 2.02 =
Question 5 Work out 4 + 8 =	**Question 6** Work out -10 - 1 =	**Question 7** Work out 76 × 43 =	**Question 8** Work out 76 × 13 =
Question 9 Work out 0.8 × 10 =	**Question 10** Work out 2 × 0.6 =	**Question 11** Work out 28 - 12 × 3	**Question 12** Work out 5 × 5 - 4
Question 13 Simplify 7a + 3b + 4a - 8b	**Question 14** Simplify 10a + 3b - 3a + 6b	**Question 15** Solve 3x - 4 = 0.5	**Question 16** Solve 14x - 6 = 8
Question 17 Find the median 13, 16, 11, 7, 5	**Question 18** Find the median 22, 7, 12, 6, 21	**Question 19** Calculate the area of a square with side length 3 cm	**Question 20** Calculate the perimeter of a regular octagon with side length 7 cm

SKILLS CHECK

Score

You must show your workings here:



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.

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.

Cycle 1 – Revision Guide

The lists below contain topics we would advise revising before the November PPEs.
Please make sure you are looking at the correct tier!
Topics marked with a * appear on both tiers (crossover topics).

Foundation Tier

Topic	Hegarty Maths	Method Maths
Rounding	17, 56	N10
Simplify expressions	156 – 159	A02
Equivalent fractions	59, 60	N09
Probability	349 – 356	D04, D05, D11
Proportion	339 – 342	N16
Bar charts	425	D01
%, fraction, ratio	77, 85, 330, 332	N14, N17, N18, N23
Substitution	155, 189	A04
Expand brackets	160, 161	A10
Solve equations	178 – 183	A05 – A06
Set notation	370 – 376	
Fractions four operation*	66, 68, 70	N24
Combine ratio*	336	
Percentage profit*	760	N22
Estimation*	131	N11
Plans & elevations*		S22
Straight line graphs	206 – 213	A17
Vectors*	623 – 626	S37
Indices*	102 – 107	N08, A07, A25
Converting units	692, 695, 698	S06
Listing outcomes	670	D09
Multiples, factors, primes	27, 28, 31, 33, 34	N04
Pie charts	427 – 429	D07
Frequency trees	368, 369	
Recipes	739 – 742	N19
Circumference	534 – 537	S18
Quadratic graphs*	251	A20
Volume of a prism	570	S19
Sequences	197, 198	A16
Use a calculator	129	N27
Timetables		F07
Scale drawing	679	S07
Stem & leaf diagram	430, 431	D08
Standard form*	122 – 125, 128	N28
Scatter graphs*	453, 454	D16
Area*	557, 559	S01, S13
Probability trees*	361	D22
Trigonometry	508 – 512	S27
Angles in polygons*	561 – 563	S16
Similar triangles	611 – 613	S26
Change the subject of a formula	280 – 284	A26

Higher Tier

Topic	Hegarty Maths	Method Maths
Fractions four operations*	66, 68, 70	N24
Combine ratio*	336	
Percentage profit*	760	N22
Estimation*	131	N11
Plans & elevations*		S22
Surface area*	585	S17
Reflection	639 – 641, 652	S23
Sharing in a ratio	332 – 334	N23
Indices	102 – 110	N08, A07, A25
Box plots	434 – 436	D21
Circle theorems	594 – 602	S31
Proof	325, 326	A31
Surds	113 – 119	N33
Algebraic proportion	343 – 347	N31
Factorising	223 – 227	A11, A22
Probability	351 – 356	D17
Simplifying algebraic fractions	229	A33
Transformation of graphs	303 – 313	A35
Solve quadratic inequalities	277	
Simplify expressions*	1556 – 159	A02
LCM, HCF*	31, 34, 36	N13
y=mx+c*	208, 209	A23
%, ratio*	85, 332	N14, N17, N18
Quadratic graphs*	251	A20
Enlargement	645	S24
Two way table	422 – 424	D10
Compound interest	94	N26
Vectors*	623 – 626	S37
Functions	288, 292 – 296	
Recognising graphs	348	
Compound measures	716 – 724, 734	S21
Probability trees	361	D22
Drawing circle graphs	314, 315, 319	A20
Histograms	442 – 449	D24
3D trigonometry	509 – 514	S27, S32
Bounds	137 – 139	N10, N29
Standard form*	122 – 125, 128	N28
Scatter graphs*	453, 454	D16
Area*	557, 559	S01, S13
Expected frequency*	355	D17
Angles in polygons*	561 – 563	S16
Solve equations unknowns both sides	184	A06
Repeated percentages	91, 92	
Similar shapes (area & volume)	615 – 621	S35
Combinations of events	671	D09
Area under the curve		
Trigonometry (sine/cosine)	521 – 524, 527 – 530	S36
Iteration	322	
Venn diagrams	384	
Congruent triangle proof	682 – 690	A30

Hegarty Maths Revision

Topic: 30 : Prime Factorisation 2	Have you checked through the required 'Building Blocks'? ☑ 29

Notes from the video:

Any composite number can be uniquely expressed as a product of primes.

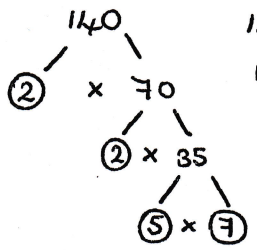
Product means times/multiply.

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



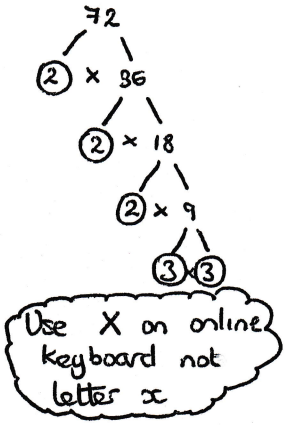
$140 = 2 \times 2 \times 5 \times 7$

in index form

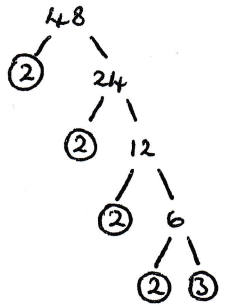
$140 = 2^2 \times 5 \times 7$

Quiz questions (showing workings and marking work as you go):

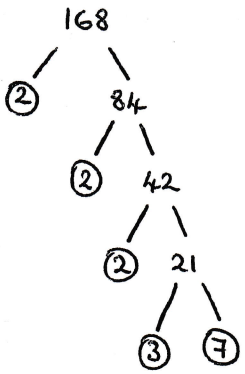
1. $125 = 5^3$ ✓
2. $81 = 3^4$ ✓
3. $72 = 2^3 \times 3^2$ ✓



4. $200 = 2^3 \times 5^2$ ✓
5. $24 = 2^3 \times 3$ ✓
6. $12 = 2^2 \times 3$ ✓
7. $20 = 2^2 \times 5$ ✓
8. $48 = 2^4 \times 3$ ✓



9. $168 = 2^3 \times 3 \times 7$ ✓
10. $36 = 2^2 \times 3^2$ ✓



Quiz score: 100 %	My confidence level: ☺ 😐 ☹

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'? ☐
Notes from the video:	
Quiz questions (showing workings and marking work as you go):	
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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