Lister Community School

ALWAYS AIMING FOR EXCELLENCE

Year 10H Maths Summer Homework

Week 1: Number and Algebra

Week 2: Number

Week 3: Number

Week 4: Number and Algebra

Week 5: Number and Algebra

Week 6: Number, Algebra and Averages

Name:

Maths Teacher:

Due date:

Week 1 topics	Clip Number	Watched
Rounding	31, 32	
Simplifying expressions	33, 34, 35	
Adding and subtracting fractions	71a, 71b	
Converting between FDP	85	

Q1. Round the following

a) 29 to the nearest 10

b) 135 to the nearest 100

c) 12.793 to 1dp

d) 0.3375 to 2 dp

Q2. Simplify these expressions

a) x -3y +9x +2y b) 2a – 9 -3b + 4a c) $2x^2 - 2x + 6x - 5 + 4x^2$

Q3. Calculate the following

a) $\frac{3}{4} - \frac{1}{4}$ b) $\frac{3}{8} + \frac{1}{4}$ c) $\frac{3}{5} + \frac{1}{3}$ d) $\frac{7}{9} - \frac{5}{8}$

Q4. Complete the table

Fractions	Decimals	Percentage
	0.15	
$\frac{2}{5}$		
		80%
		17.5%

Week 2 topics	Clip Number	Watched
Significant figures	90	
Multiplying and dividing whole numbers	19, 20	
Rules of indices	29, 131, 154, 188	
Multiplying fractions	73	
Percentage of an amounts	86, 87	

Q1. Round the following

a) 29 to 1sf

b) 135 to 2sf

c) 12.793 to 1sf

d) 0.3375 to 3sf

Q2. Calculate the following

a) 15 x 34 b) 542 x 28 c) 121 ÷ 8 d) 542 ÷ 18

Q3. Simplify

a) $5^5 \times 5^2 \times 5^4$ b) $5^4 \times 5^{-3}$ c) $(3^6)^2$ d) $\frac{3^6 \times 3^2}{3^3}$

Q4. Calculate the following

a) $\frac{3}{4} \times \frac{1}{4}$ b) $\frac{3}{8} \times \frac{1}{4}$ c) $\frac{3}{5} \times \frac{1}{3}$ d) $\frac{7}{9} \times \frac{5}{8}$

Q5 Find

a) 10% of £46 b) 27% of 390g c) 53% of 15l d)7% of 12m

Week 3 topics	Clip Number	Watched
Multiplying and dividing decimals	66, 67	
Primes factor decomposition	78	
Dividing fractions	74	
Percentage increase and decrease	108	

Q1. Calculate the following

a) 15×3.3 b) 4.3×7.8 c) $12.1 \div 4.5$ d) $54.2 \div 18$

Q2. Express the following as the product of its primes

a) 84 b) 150 d) 120 e) 147

Q3. Calculate the following

a) $\frac{3}{4} \div \frac{1}{4} =$ b) $\frac{3}{8} \div \frac{1}{4} =$ c) $\frac{3}{5} \div \frac{1}{3}$ d) $\frac{7}{9} \div \frac{5}{8}$

Q4. Calculate the following

a) Increase 55 by 15% b) Increase 120 by 17.5%

c) Decrease 74g by 27% d) Decrease £5 by 80%

Week 4 topics	Clip Number	Watched
Addition with decimals	117	
HCF and LCM	79, 80	
Expanding brackets	93, 134a, 134b	
Converting between mixed numbers and improper fractions		

Q1. Calculate the following

a) 15 + 3.3 b) 4.3+ 7.8 c) 12.1+ 4.5 d) 54.2+18

Q2. Find the HCF and LCM for the following numbers

a) 2 and 8 b) 15 and 60 b) 16 and 52

Q3. Expand and simplify

a) 2(5x -1) b) 6x(4x-3y) c) 2(3-4x) + 3(5x + 1) d)4xy(y + 3x)

e) (x + 1)(x + 5) f) (x – 3)(x + 4) d) (2x – 1)(x +3)

Q4. Convert the following to either mixed number or improper fraction

a) $\frac{11}{3} =$ b) $\frac{120}{7} =$ b) $3\frac{4}{5} =$

Week 5 topics	Clip Number	Watched
Subtraction with decimals	18	
Solving equations	135a, 135b	
Factorising	94, 157, 192	
Order of operations	75	

Q1. Calculate the following

a) $15.7 - 3.3$ b) $4.3 - 2.8$ c) $12.1 - 24.5$ d) $54.2 - 18.43$

Q2. Solve the equations

a) $2s + 1 = 5$ b) $3r - 5 = 4$ c) $\frac{p-7}{3} = 7$ d) $\frac{m}{3} + 2 = 6$

Q3. Factorise completely

a) $12a + 18$ b) $12ab + 6b^2$ c) $2x^2 - 4x$ d) $3xy^2 - 5x^2y$

e) $x^2 + 8x + 16$ f) $x^2 - 8x - 33$ g) $3x^2 + 8x + 4$

h) $x^2 - 16$

Q4. Calculate the following

a) $5 + 3 \times 8$ b) $(12 + 9) \div 7$ c) $3 \times 1 + 4^2$ d) $\frac{(5+3)^2}{8}$

e) Add brackets to make true: $5 \times 3 \times 4 + 2 = 70$

Week 6 topics	Clip Number	Watched
Linear Sequences	103	
Averages from a list	62	
Simplifying ratios	38	
Standard Form	83	

Q1. Find the nth term for the following

a) 12, 20, 28, 36.. b) 16, 9, 2, -5… c) 24, 27, 30, 33…

Q2. Find the mean, mode, median and range (round to 1 dp)

a) 19 4 2 18 8 9 8

b) 11 4 17 10 2 17

Q3. Simplify the following ratio

a) 14cm : 0.12mm b1.6cm : 24mm c)6cm : 0.16m

d) 0.015m : 40mm e) £0.50 : 70p f) 30p : £1.50

Q4. Express the following numbers as

(i) Standard form

a) 19000 b) 0.000038 c) 0.14×10^{6} d) 55×10^{-4}

(ii) Ordinary number

a) 3.2×10^{5} b) 2.8×10^{-3}