

Year 8 higher work pack

1	Write down all the factors of (i) 24 (ii) 105	
2	List all the numbers between 20 and 40 that are multiples of both 2 and 3	
3	Use the column method for subtraction to work out 6854 - 2039	
4	Use a factor tree to write the number 45 as a product of its prime factors	
5	Use the 'bus stop' method to work out the following, giving your answer as a decimal 595 ÷ 34	
6	Calculate (i) $-23 - -18 =$ (ii) $-4 + -11 =$	
7	$-16 \times -5 =$	
8	Round 207468 to 2 significant figures	
9	Work out the following percentages (i) 40% of 70m (ii) 5% of £90	
10	Solve the following equations (i) $x + 7 = 83$ (ii) $3x - 5 = 31$	

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1	Round 605872 to one significant figure													
2	Calculate $\frac{9}{10} + \frac{3}{20}$													
3	Without a calculator, work out 42×1.1													
4	Write the following fractions as decimals: (i) $\frac{6}{25}$ (ii) $\frac{16}{20}$													
5	Solve the equation $2(3x + 1) = 32$													
6	Calculate (i) $-4 \times -9 =$ (ii) $17 - - 4 =$													
7	What is the gradient of the line $y = x - \frac{1}{2}$? What are the coordinates of the y intercept?													
8	Round 0.2187 to 3 decimal places													
9	Increase 5.234 by $\frac{2}{10}$ and $\frac{3}{100}$													
10	Complete the table for the equation $y = 2x + 6$ What are the coordinates of the mid-point of this line segment?	<table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse; text-align: center;"> <tbody> <tr> <td style="width: 15%;">x</td> <td style="width: 15%;">-1</td> <td style="width: 15%;">0</td> <td style="width: 15%;">1</td> <td style="width: 15%;">2</td> <td style="width: 15%;">3</td> </tr> <tr> <td>y</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	x	-1	0	1	2	3	y					
x	-1	0	1	2	3									
y														
Ext	Write an expression for the following: I start with y , add 7, square the result, and then divide by x .													

Year 8 higher work pack

1	Round 0.0626 to one significant figure													
2	Calculate $\frac{7}{10} - \frac{2}{3}$													
3	Without a calculator, work out 105×5.2													
4	Write the following fractions as decimals: (i) $\frac{4}{5}$ (ii) $\frac{7}{20}$													
5	Solve the equation $\frac{x}{3} + 7 = 10$													
6	Calculate (i) $-8 \times 6 =$ (ii) $-13 + -7 =$													
7	What is the gradient of the line $y = -x + 2$? What are the coordinates of the y intercept?													
8	Round 0.05798 to 2 decimal places													
9	Decrease 0.106 by $\frac{1}{100}$													
10	Complete the table to show the corresponding values of y for values of x from -1 to 3 for the following equation $y = x - 7$	<table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse; text-align: center;"> <tbody> <tr> <td style="width: 20px;">x</td> <td style="width: 40px;">-1</td> <td style="width: 40px;">0</td> <td style="width: 40px;">1</td> <td style="width: 40px;">2</td> <td style="width: 40px;">3</td> </tr> <tr> <td>y</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	x	-1	0	1	2	3	y					
x	-1	0	1	2	3									
y														
Ext	Write an expression for the following: I start with x , square it, add 2 and then divide the result by 5													

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1	Divide 108 in the ratio 5:1:3													
2	Calculate $\frac{4}{5} \div \frac{3}{4}$													
3	Without a calculator, work out 62×3.7													
4	Write the following decimals as fractions in their lowest terms: (i) 0.048 (ii) 0.12													
5	Solve the equation $7(2x + 3) = 77$													
6	Calculate (i) $-56 \div -7 =$ (ii) $-27 - -16 =$													
7	What is the gradient of the line $y = 5x - 1$? What are the coordinates of the y intercept?													
8	Round 0.000557 to 2 significant figures													
9	Increase 0.542 by $\frac{1}{100}$													
10	Complete the table to show the corresponding values of y for values of x from -1 to 3 for the following equation $y = 2x - \frac{1}{2}$	<table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse; text-align: center;"> <tbody> <tr> <td style="width: 20px;">x</td> <td style="width: 40px;">-1</td> <td style="width: 40px;">0</td> <td style="width: 40px;">1</td> <td style="width: 40px;">2</td> <td style="width: 40px;">3</td> </tr> <tr> <td>y</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	x	-1	0	1	2	3	y					
x	-1	0	1	2	3									
y														
Ext	Write an expression for the following: I start with x , square it, add 3 and then multiply the result by 2													

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1	Divide 84 in the ratio 2:4:6													
2	Calculate $\frac{8}{9} \div \frac{5}{6}$.													
3	Without a calculator, work out 57×5.3													
4	Write the following decimals as fractions in their lowest terms: (i) 0.016 (ii) 0.45													
5	Solve the equation $5(x + 1) = 45$													
6	Calculate (i) $96 \div -12 =$ (ii) $-15 + -11 =$													
7	What is the gradient of the line $y = 3x + 2$ What are the coordinates of the y intercept?													
8	Round 5367000 to 2 significant figures													
9	Convert 2.04 tonnes into kg													
10	Complete the table to show the corresponding values of y for values of x from -1 to 3 for the following equation $y = 3x + 4$	<table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse; text-align: center;"> <tbody> <tr> <td style="width: 15%;">x</td> <td style="width: 15%;">-1</td> <td style="width: 15%;">0</td> <td style="width: 15%;">1</td> <td style="width: 15%;">2</td> <td style="width: 15%;">3</td> </tr> <tr> <td>y</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	x	-1	0	1	2	3	y					
x	-1	0	1	2	3									
y														
Ext	What name do we give to the type of graph that has the equation $y = 2x^2 + 3$? Describe the shape of the graph.													

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1	<p>Write a decimal between the following pairs of numbers</p> <p>(i) 0.152 0.153 (ii) 0.007 0.008</p>	
2	<p>Write in m</p> <p>a) 28746 mm b) 632 km</p>	
3	<p>Use the column method of multiplication to work out</p> <p style="text-align: center;">257×46</p>	
4	<p>If $274 \times 23 = 6302$ What is the answer to</p> <p>(i) $6302 \div 2.3$? (ii) 2.74×23?</p>	
5	<p>Use the 'bus stop' method to work out the following, giving your answer as a decimal</p> <p>$845 \div 26$</p>	
6	<p>Calculate</p> <p>(iii) $-17 + -15 =$ (iv) $21 - -33 =$</p>	
7	<p>$-84 \div -7 =$</p>	
8	<p>Round 0.0002658 to 2 significant figures</p>	
9	<p>Write the following numbers in standard form</p> <p>(iii) 502 (iv) 3860000</p>	
10	<p>Find the value of (in simplest form)</p> <p>(iii) $\sqrt{121}$ (iv) $\frac{2^3}{24}$</p>	

Year 8 higher work pack

1	Divide 56 in the ratio 2:5	
2	Calculate $\frac{11}{12} - \frac{5}{7}$.	
3	Use the 'bus stop' method to work out $1092 \div 42$	
4	Write the following decimals as fractions in their lowest terms: (i) 0.08 (ii) 0.66	
5	Increase 220 by 65%	
6	Calculate (v) $-54 \div -9 =$ (vi) $-13 - -7 =$	
7	Write the following times in 24 hour clock (i) 2:15 am (ii) 9:37 pm	
8	Round 0.004657 to 2 significant figures	
9	Convert 2.04 tonnes into kg	
10	Solve the following equations (v) $4x + 5 = 41$ (vi) $5(x + 3) = 75$	
Ext	Find the nth term of the following sequence $8, 11, 14, 17, \dots$	

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1	Divide 44 in the ratio 3:8	
2	Calculate $\frac{17}{24} - \frac{6}{18}$.	
3	Use the 'bus stop' method to work out $1353 \div 33$	
4	Write the following decimals as fractions in their lowest terms: (i) 0.24 (ii) 0.85	
5	Increase 450 by 45%	
6	Calculate (vii) $63 \div -7 =$ (viii) $-21 - -5 =$	
7	Write the following times in hours and minutes (iii) 260 minutes (iv) 225 minutes	
8	Round 6073.925 to 2 significant figures	
9	Convert 1.76 tonnes into kg	
10	Solve the following equations (vii) $2x - 14 = -6$ (viii) $7(8 - c) = 49$	

Year 8 higher work pack

1	Write down all the factors of 45	
2	Calculate $\frac{4}{15} + \frac{2}{5}$.	
3	Use the 'bus stop' method to work out $936 \div 24$	
4	Write the following percentages as fractions in their lowest terms: (i) 48% (ii) 5%	
5	Decrease 800 by 24%	
6	Calculate (ix) $-77 \div 11 =$ (x) $-14 + -8 =$	
7	Write the following ratios in their simplest form: (v) $30 : 18 : 6$ (vi) $20\text{cm} : 1\text{m}$	
8	Round 1823.55 to 2 significant figures	
9	It takes Sian 9 days to read a 432 page book. How long will it take her to read a 720 page book at the same rate?	
10	Solve the following equations (ix) $4x + 2 = 50$ (x) $3(n + 2) = 15$	

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1	Is 51 a prime number? Explain your answer.	
2	Which is bigger, 0.81 or $\frac{4}{5}$? Show how you know.	
3	Use the column method of multiplication to work out 192×49	
4	To make 6 jugs of custard, you need to use 3 pints of milk. How much milk is needed to make 4 jugs?	
5	Use the 'bus stop' method to work out the following $1189 \div 29$	
6	Calculate (xi) $-3 \times -13 =$ (xii) $-10 - -16 =$	
7	Expand the brackets in the following expression $7x(x + 4 + y)$	
8	Round 23.557 to 1 decimal place	
9	Which is larger (v) 1 inch or 1 cm? (vi) 3 ounces or 50g?	
10	Solve the following equations (xi) $5x - 7 = 43$ (xii) $4 = 100 - 8p$	

Year 8 higher work pack

1	Write down the prime numbers from this list 7, 15, 23, 28, 35, 49, 53, 59	
2	Write the improper fraction $\frac{33}{24}$ as a mixed number	
3	Use the column method of multiplication to work out 584×63	
4	Use a factor tree to write the number 72 as a product of its prime factors	
5	Use the 'bus stop' method to work out the following, giving your answer as a fraction $1743 \div 28$	
6	Calculate (xiii) $11 - - 6 =$ (xiv) $-7 + - 15 =$	
7	$-64 \div -4 =$	
8	Round 530420 to 3 significant figures	
9	Work out the following percentages (vii) 30% of £64 (viii) 5% of 15km	
10	Solve the following equations (xiii) $2x + 3 = 25$ (xiv) $12x - 17 = 79$	