



TALENT POOL ACADEMY

Name:.....

Year Group:.....

MATHEMATICAL REASONING

BOOK 5

Section 1 Test 1

A			B		
1	Multiply the sum of 3.6 and 2.4 by 0.4.	_____	1	11×10^2	_____
2	Write as a decimal $5 + \frac{5}{50} =$	_____	2	5% of 2400 =	_____
3	$1.5 (1.5 + 2.5) =$	_____	3	£18 divided 5 =	£_____
4	$3a + 4a - 7a =$	_____ a	4	$(5 \times 3) + (3 \times 2) =$	_____
5	$3(m - 2) = 15$	m= _____	5	5.7m multiplied by 6 =	_____ m
6	Find 22% of £25	£ _____	6	$1.75\text{kg} + 230\text{g} =$	_____ kg
7	Round 431.2095 to 3 decimal places.	_____	7	Write 0.657 as a fraction.	_____
8	An aeroplane flies 3900 km in 6 hours. What is the mean (average) speed?	_____ km/h	8	Area of a square with sides of length 16cm.	_____ cm ²
9	What is the perimeter of a rectangular field measuring 35m by 22m?	_____ m	9	How many weeks are there in 210 days?	_____ weeks
10	What is the size of each interior angle of an equilateral triangle?	_____	10	If 23 buses come every hour, how many buses will arrive in 15 hours?	_____ buses
11	If $a = 5$, $b = 2$, Find the value of $3b+a$	_____	11	The area of a rectangle is 405cm^2 . Its width is 20cm. Find its length.	_____ cm
12	120 weeks is how many years and weeks?	_____ years _____ weeks	12	What is the area of a triangle with a base of length 7mm, and a height of 13mm?	_____ mm ²
13	$5p + 2.5 = 10$	_____	13	If $x = 9$, $y = 4$, Find the value of $11y + 3x$.	_____
14	$£1.27 + 55p =$	£ _____	14	What will the date be 100 days after March 21 st 2019?	___/___/___
15	Work out: $\frac{w}{4} + \frac{1}{2} = 2$	W= _____	15	What is the annual interest on £540 at 2%?	£ _____
16	How much interest at 5% is given on £600?	£ _____	16	400ml of milk costs 65p. Find the price per litre.	£ _____

Section 1 Test 2

A			B		
1	Multiply the difference between 14.88 and 3.13 by 0.4.	_____	1	Which of these numbers are multiples of 15? 75 65 90 115 170 310	_____
2	Write as a decimal $2 + \frac{1}{10} =$	_____	2	Find 27% of £3500.	_____
3	$5(3.2 + 4.1) =$	_____	3	Work out $(-5 \times -6) + 17$.	_____
4	$3a + 4a - 7a =$	m= _____	4	How long will it take to drive 65.5km while travelling at 15km/h?	_____ hours
5	$3(m - 2) = 15$	_____ a	5	Divide 24 by 0.06.	_____
6	Find 22% of £25	£ _____	6	A rectangle has a width of 7cm. Its length is double the width. Calculate the perimeter.	_____ cm
7	Round 431.2095 to 3 decimal places.	_____	7	An apple costs 37p, and a banana costs 22p. How much would it cost to buy 8 bananas and 4 apples?	£ _____
8	An aeroplane flies 3900 km in 6 hours. What is the mean (average) speed?	_____ km/h	8	$9(y - 17) = 810$ Find y.	y = _____
9	What is the perimeter of a rectangular field measuring 35 m by 22 m?	_____ m	9	Wood costs £8.47 per m ² . How much would it cost to buy 11m ² of wood?	£ _____
10	What is the size of each interior angle of an equilateral triangle?	_____	10	What number is 47 less than -18?	_____
11	If l=12, b=5, h=2 Find the value of lbh.	_____	11	Express 0.95 as a: a. Fraction b. Percentage	_____ _____%
12	Estimate to the nearest ten: $28.6 \times 3.22 =$	_____	12	A triangle has an area of 100cm ² . It has a height of 5 cm. Find the length of the base.	_____ cm
13	How many Euros for £500 at 1.25 Euros to £1?	_____	13	Subtract 41p from the total of 27p, 38p, and 94p.	£ _____
14	Express $\frac{9}{25}$ as a: a. Percentage b. Decimal	_____% ____.	14	How many days are there in 87 weeks?	_____ days
15	How much is 3.5×10^5	_____	15	How many times is 2.5 contained in 200?	_____
16	Molly scores 36 out of 60 marks in her Maths test. What was her percentage?	_____	16	Work out $\frac{3}{8} \times 4\frac{1}{2}$.	_____

Section 1 Test 3

A			B		
1	Find the quotient of 9 and the sum of 51 and 30.	_____	1	What sum of money is 300% of £150?	£_____
2	Work out: $7 - (-3) + (-9) =$	_____	2	A cake has a weight of 400g. $\frac{3}{8}$ has been eaten. What is the weight of the cake now?	_____g
3	If $m=6$, $n=5$, evaluate $m^2 - n^2$.	_____	3	Order the following numbers in ascending order. $0.001, \frac{1}{10}, 1, \frac{1}{100}, 10$	_____
4	A tank has a 0.8m square base and is 0.75m tall. Find the volume.	_____ m^3	4	Find the cost of 3kg at 62p per 500g.	£_____
5	Work out: $4y - 3x + 7y - 4x + 6x =$	_____	5	How many times larger is 12 than 0.00012.	_____
6	Solve: $\frac{m^2}{3} - 3 = 24$	_____m	6	The diameter of a circle is 15cm. Work out the radius in millimetres.	_____mm
7	Find the cost of 2.25kg at £10 per half kg.	£_____	7	Two angles in an isosceles triangle are 53 degrees. What is the size of the third angle?	_____°
8	What is the circumference of a circle with a radius of 3.5cm?	_____cm	8	If $m = 7$, Find $m^2 + 2m$.	_____
9	4 hamsters weigh a total of 200g. How many have a mass of 2.5kg?	_____	9	Find the complimentary angle to an angle of 73° on a straight line.	_____°
10	Work out the values of: $24 - 6 \times 3 + 1$ $(24 - 6) \times (3 + 1)$ $(24 - 6) \times 3 + 1$	_____ _____ _____	10	A student scored 38 out of 40 on a test. What percentage did he get?	_____
11	$32\text{km} =$ _____ miles	_____	11	Find the value of $12 + 5 \times 6 - 21$	_____
12	An equilateral triangle has how many lines of symmetry?	_____	12	Divide £20 by 3. Give your answer to the nearest penny.	£_____
13	If you travel 9km in 10min, what is your speed?	_____ km/h	13	A piece of paper measures 300mm by 25mm. Find its area in cm^2 .	_____ cm^2
14	Dan can spend £20 in 7 days. How much is that per day?	_____	14	What percentage of 5 litres is 1.2 litres.	_____%
15	How many years are between MDCCXCV and MDCC?	_____	15	Change $\frac{47}{7}$ into a mixed number.	_____
16	Work out the HCF of 16, 32, 56.	_____	16	Find the cost of 1.2kg at 95p per 100g.	£_____

Section 1 Test 4

A

1	Work out the product of prime factors of 210.	_____
2	Simplify: $-5c + 10d + 12c - 17d - 2b =$	_____
3	$16\text{oz} = 1\text{lb}$, 5lb and $6\text{oz} =$	_____oz
4	Reduce £90 by 15%	£_____
5	Write $\frac{2}{3}$ as a decimal to two significant figures.	_____
6	A TV costs £1500. How many months does it take to pay for it at £75 per month?	_____months
7	Solve: $3y - 20 = 54$	_____
8	How many eggs are 3.5 dozen if dozen is 12?	_____
9	If $p = 1$, $q = 2$ evaluate $\frac{pq}{p^2}$	_____
10	Write the next two terms in the sequence: 1, 4, 9, 16, __, __	_____
11	$1.2 \times 0.12 =$	_____
12	Add $\frac{3}{4}$ of 40 to $\frac{4}{5}$ of 80.	_____
13	How many ha are in 5km^2	_____ha
14	How many minutes between 07:44 and 11:18?	_____
15	A car travels at 70mph for 1hr 45min. How far did it travel?	_____miles
16	Find the LCM of 14 and 24	_____

B

1	Multiply the sum of 5.3 and 2.7 by 0.1.	_____
2	Through how many degrees does the minute hand of a clock turn in 20 minutes.	_____°
3	Find the area of a rectangle measuring 9m long and 1.6m wide.	_____m ²
4	30 footballs cost £72 How much do 5 footballs cost?	£_____
5	The price of a pen increased from 80p to £1. Work out the increase as a percentage.	_____%
6	Work out 70 multiplied by 700.	_____
7	The area of a square is 169cm^2 . Work out the length of each side.	_____
8	Work out $\frac{5}{6} \div \frac{3}{2}$.	_____
9	How many weeks are in 91 days?	_____
10	Find the time in hours and minutes from 15:20 to 19:15.	_____
11	Write 153623 to 2 significant figures.	_____
12	How many centimetres are there in 2.69m?	_____
13	0.5kg of raisins cost £1.30. Find the cost of 800g.	£_____
14	Find 35% of £40.	£_____
15	What is the remainder when you divide 55 by 7?	_____
16	Find the total number of days from 1 st February to 20 th June.	_____days

Section 1 Test 5

A

1	Work out (1.5^2)	_____
2	Solve: $4q - 3p + 3q + 7p - 7q =$	_____
3	Solve: $\frac{1}{a} = 2$	_____ = a
4	Find the number between 0 and 40 with factors of 3 and 4.	_____
5	The length of a rectangle is twice the width and has a perimeter of 54cm. Find the length: Find the width:	_____ length _____ width
6	A point has the coordinate (5,3). If it is reflected on the y-axis what are the new coordinates?	(_____ , _____)
7	A square of the area of $4cm^2$ is enlarged by the scale factor of 3. What is the new area?	_____ $4cm^2$
8	Share £1.20 in the ratio 1:2.	_____ : _____
9	$\frac{1}{4}$ mile in $\frac{1}{2}$ min . Find the speed.	_____ mph
10	Work out 5 divided by 0.1.	_____
11	Sam eats 20% of a cake. What angle is that?	_____
12	Find: Area of circle with d=12metres	_____
13	$3ft = 1yd$, $7yd =$	_____
14	Which of these is in the second millennium? 2850, 1725, 986.	_____
15	Find median of 6,12,9,22,16,13,16	_____
16	If 260 pencils cost £15. How many pencils for £6?	_____

B

1	Divide the sum of 7.4 and 4.6 by 10.	_____
2	£200/80	_____
3	The time 10:35 is the same as _____ minutes to _____	_____
4	I put down a 10% deposit on a car costing £7350. How much is left to pay?	_____
5	If an isosceles triangle has two 35 degree angles, what is the size of the third angle?	_____
6	If an apple costs £0.30 and a pear costs £0.40. How much do 5 apples and 3 pears cost?	_____
7	Which letters of the word APPARENTLY have a vertical line of symmetry?	_____
8	Find the area of a square field with perimeter 48cm	_____
9	What is $10 + 3 \times 5$?	_____
10	What is 2.5 squared?	_____
11	What is $2.75m + 321cm + 1205mm$?	_____ m
12	$a=1.2$ $b=3$ $c=2.4$ So, what is $4a+2b-3c$?	_____
13	Express 45% of 360.	_____
14	If $b = 9$ and $3a + b = 38$. Find the value of a.	a=_____
15	$(3.2 - 2.4) \times (4.2 + 3.7)$	_____
16	What is 7×5.2 ?	_____

Section 1 Test 6

A			B		
1	Work out the product of prime factors of 72.	_____	1	A triangle has two angles measuring 70° and 67° . Work out the size of the third angle.	_____ $^\circ$
2	Simplify: $-7a + 29b + 12c - 17a - 2b$	_____	2	Find 30% of £81.	£ _____
3	$16\text{oz} = 1\text{lb}$, 5lb and $6\text{oz} =$	_____ oz	3	Approximate 1760m to the nearest kilometre.	_____ km
4	Find the average: 21, 13, 16, 11	_____	4	If 10 pineapples cost £3.40, how much would 25 pineapples cost.	£ _____
5	Calculate: 0.8×0.0021	_____	5	There are 37 quadrilaterals in a box. How many sides are there in total?	_____
6	The acute angle of a rhombus is 40° . What is the obtuse angle?	_____	6	A wooden block measures $5\text{cm} \times 8\text{cm} \times 10.5\text{cm}$. Work out the volume of the block.	_____ cm^3
7	What number is CDXXIV?	_____	7	I buy books costing £1.35, £2.05 and 62p. How much change from £5?	£ _____
8	Approximate 1.057 to the nearest 1 decimal place.	_____	8	Express 1.3261kg in grams.	_____ g
9	BOUGHT- which letters have both a vertical and horizontal lines of symmetry?	_____	9	A team scored 75 goals in 15 games. On average, how many goals did they score each game?	_____
10	Change 3.3m into mm.	_____	10	Write 0.0472927 to 4 significant figures.	_____
11	What is 20% of 14.99 to the nearest £1	_____	11	A cube has a volume of 81cm^3 . How long is the cube's edge?	_____ cm
12	$2\frac{2}{3} \div \frac{8}{12} =$	_____	12	A line was enlarged by scale factor 6. The new line is 78cm long. How long was the original line?	_____ mm
13	$\frac{(t+2)}{5} = 4$	_____	13	$(9 + 13) \times (3+18) =$	_____
14	$0.05 \times 45 =$	_____	14	A car received a 15% discount. Its new price is £1350. Work out the original price.	£ _____
15	The 11:17 train to Vienna arrives at 15:03. How long does the journey take?	_____	15	What is 1.5^2 ?	_____
16	Find the cost of 2.25kg at 30p per half kg.	_____	16	A cuboid measures $4\text{m} \times 7\text{m} \times 13\text{m}$. What is the total surface area?	_____ m^2

Section 1 Test 7

A			B		
1	Multiply the sum of 2.9 and 12.5 by 0.8.	_____	1	The price of a car increases from £9000 to £13500. Work out the percentage increase.	_____ %
2	Write as a decimal $3 + \frac{2}{40} =$	_____	2	A sprinter can run 100m in 13.96 seconds. How long would it take for them to run 800m?	_____ s
3	$2.8(3.2 + 6.5) =$	_____	3	I have 3 triangles, 12 squares, and 7 pentagons. How many sides are there in total?	_____
4	$-3a + 4c - 3a + 7a - 24c =$	_____	4	A rubber was bought for £4 and sold at a profit of 55%. Find the new price.	£ _____
5	$13(m - 2) = 247$	m = _____	5	0.2kg of grapes costs £2.50. How much would 1.1kg of grapes cost?	£ _____
6	Find 11% of £75	£ _____	6	Work out $17^2 - 30$.	_____
7	Round 499.2073 to 3 decimal places.	_____	7	Write 0.1735 as a fraction.	_____
8	An aeroplane flies 12000 km in 13 hours. What is the mean (average) speed?	_____ km/h	8	Find the first four prime numbers.	_____
9	What is the perimeter of a rectangular field measuring 12 m by 62 m?	_____ m	9	A box is 1.8m long, 1.1m wide and is 0.25m deep. Find the volume.	_____ m ²
10	What is the size of each interior angle of a right-angled, equilateral triangle?	_____	10	A car is travelling 40km/h for 150 minutes. Find the distance travelled.	_____ km
11	If a=7, b=12 Find the value of $4b/2a$	_____	11	If five bags of peas cost £2.25. How much will 30 bags cost?	£ _____
12	312 weeks is how many years and weeks?	_____ years _____ weeks	12	A quadrilateral has angles measuring 110° , 130° , and 55° . Find the size of the fourth angle.	_____ °
13	$12p + 2.5 = 25$	_____	13	Work out 1209 divided by 3.	_____
14	$£1.87 + 34 + 83p =$	£ _____	14	A clown has 97 balloons. He gives 3 balloons to 27 children. How many balloons are left?	_____
15	Work out: $\frac{w}{4} + \frac{1}{2} = 2$	W = _____	15	How many days are there in 4 years?	_____
16	How much interest at 2% is given on £12030?	£ _____	16	$5m + 17 = 94$. Find m.	_____

Section 1 Test 8

A

1	Multiply the difference of 9.4 and 2.2 by 0.4.	_____
2	Write as a decimal $3 + \frac{1}{100} =$	_____
3	$4.2 (9.75 - 2.5) =$	_____
4	$32y - 23z + 13z - 72y =$	_____
5	$3 (m - 2) = 15$	_____
6	Find 22% of £25	£ _____
7	Round 439.291 to 3 significant figures.	_____
8	A car drives 70mph in 6 hours. What is the total distance travelled?	_____ miles
9	What is the area of a circular field measuring 12m diameter?	_____ m ²
10	What formula is used to work out the area of a trapezium?	_____
11	If $l=32$, $b=4$, $h=2$ Find the value of $l+bh$.	_____
12	Estimate to the nearest ten: $21.62 \times 12.72 =$	_____
13	How many Euros for £2400 at 1.25 Euros to £1?	_____
14	Express $\frac{12}{30}$ as a: a. Percentage b. Decimal	_____ % ____ . ____
15	How much is 2.1×10^4	_____
16	Molly scores 12 out of 40 marks in her Maths test. What was her percentage?	_____

B

1	A taxi drives 20km in 30 mins. Work out the average speed of the journey.	_____ km/h
2	Each square has a side length of 11mm. Find the total area of 6 squares.	_____ mm ²
3	$\frac{9}{11} \times \frac{7}{6} =$	_____
4	A triangle has three angles measuring 60 degrees. What type of triangle is this?	_____
5	If $k = 7$, $g = 67$, $b = 6$ Find the value of $bk + g$.	_____
6	30 cakes were bought for £15 and sold for £22.50. What was the profit on each cake?	£ _____
7	11 Bottles each have a capacity of 991ml. Find their total capacity to the nearest litre.	_____ L
8	How many minutes between 06:55 and 11:19?	_____
9	$(8.5 + 0.9) \times (1.3 + 0.4) =$	_____
10	Express 370 weeks to the nearest year.	_____
11	A right-angled triangle has sides of length 7cm, 8cm, 12cm. Find its area.	_____ cm
12	Share £5.40 in the ratio 2:3.	_____ : _____
13	There are 13 octagons in a box. How many sides are there in total?	_____
14	A circle has a radius of 4mm. Work out the circumference. ($\pi = 3.14$)	_____ mm
15	Divide the sum of 13.3 and 5.7 by 20.	_____
16	The price of a car is reduced by 20%. The new price is £32000. Work out the original price.	£ _____