**S3 Revision Outline**

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| **Topic** | **Example** |
| **Significant figures** | What is 3 675 039 to 2 significant figures? ***3 700 000*** |
| **Basic Numeracy (Non-calculator)** | * Adding, subtracting, multiplying and dividing decimals, fractions and whole numbers.
* Percentage calculations
* Find the area or perimeter of basic shapes (circles, quadrilaterals and triangles)
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| **Compound Interest** | £3570 is invested in a bank at an interest rate of 4% per annum. How much interest will be gained over 3 years?$$3570 ×(1.04)^{3}=£4015.76$$ |
| **Working Backwards Percentages** | David buys a pair of jeans in a sale for £37.50. If he received a discount of 25%, what was the original price of the jeans.$$75\%=£37.50$$$$1\%=£0.50$$$$100\%=£50$$ |
| **Scientific Notation** | Write $4.32×10^{-7}$mm in full.$$0.00 000 0432$$ |
| **Speed, Distance, Time** | * Calculations of all 3 types using a calculator and without a calculator
* Speed, distance and time graphs
 |
| **Brackets** | * Multiply out brackets $(x-2)(3x+4)$

$$=3x^{2}+4x-6x-8$$$$=3x^{2}-2x-8$$* $(x+2)^{2}=(x+2)(x+2)$

$$=x^{2}+2x+2x+4$$$$=x^{2}+4x+8$$ |
| **Solving Equations** | Solve: 7(a-3)= 3(a+1)$$7\left(a – 3\right)=3\left(a+1\right)$$$$7a-21=3a+3$$$$4a-21=3$$$$4a=24$$$$a=7$$ |
| **Substitution** | Evaluate $a^{2}+bc when a=4, b=3 and c=2$$$a^{2}+bc= 4^{2}+3×2=16+6=22$$ |

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| **Factorising** | * Factorise by highest common factor

$$4x^{2}+8x=4x(x+2)$$* Factorise by difference of 2 squares

$$16x^{2}-25y^{2}=(4x-5)(4x+5)$$* Factorise trinomials

$$x^{2}-x-20=(x+4)(x-5)$$ |
| **Circles** | * Area of a sector: $\frac{angle}{ 360}×πr^{2}$
* Length of an arc$: \frac{angle}{3 60}×πD$
* Angle calculations involving tangents, chords and a variety of triangles.
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| **Trigonometry** | * SOHCAHTOA to find the length of a side or an angle eg.

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| Find x: | 13.4 cm34°x |

$$\tan(34=\frac{13.4}{x})$$$$x=\frac{13.4}{tan 34}$$$$x=19.9 cm$$ |
| **Pythagoras** |

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| A picture frame is 25 cm high and 21.5 cm wide. Is the frame rectangular? | http://www.ghostorchid.co.uk/images/products/gold-swept-12x16-frame477.jpg21.5 cm25 cmd |

$$d^{2}=21.5^{2}+25^{2}$$$$d^{2}=1087.25$$$$d=33.0 cm$$**The frame is not rectangular.** |
| **Statistics**  | * Mean, median and mode
* Draw and interpret pie charts
* Calculate 5 figure summary (L,H, Q1, Q2, Q3)
* Draw a boxplot
* Draw a stem and leaf diagram (including a key)
* Can calculate the Semi Inter-Quartile Range
* Scattergraphs (can draw a line of best fit and describe the correlation
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| **Simultaneous Equations** | * 4 coffees and 2 muffins cost £6. Three coffees and 2 muffins cost £4. How much would 1 coffee and 1 muffin cost?

**Make equations:** $4c+4m=6 \left(1\right) and 3c+2m=4 \left(2\right)$$$2 ×\left(2\right): 6c+4m=8 \left(2\right)$$$$4c+4m=6 \left(1\right)$$$$\left(2\right)-\left(1\right): 4c=2$$$$ c=£0.50 $$**Substitute back into** $\left(1\right): 4×0.5+4m=6 $$$2+4m=6$$$$4m=4$$$$m=£1$$**Muffins cost £1 and coffee cost £0.50 so the total cost would be £1.50.** |

**Revision Resources:**

1. <http://www.mymaths.co.uk/> login: forfar and password: metre

This website has lessons and homework on every topic in the S3 course.

1. <http://www.mathsrevision.com/index_files/OnlineRevision.htm>

This website has resources listed by topic including past paper questions.

1. <http://www.bbc.co.uk/schools/gcsebitesize/maths/>

This is an alternative to MyMaths. It contains revision, activities and tests on every topic.