

## FIFTY50 MATHEMATICS - FILES LIST

### Worksheets

- W001-Addition of whole numbers
- W002-Addition chains
- W003-Subtraction of whole numbers
- W004-Mixed tables
- W005-Multiplication of whole numbers
- W006-Division of whole numbers
- W007-Distributive law
- W008-Order of operations
- W009-Divisibility by 1, 2, 4, 8
- W010-Divisibility by 3, 6, 9, 12
- W011-Divisibility by 5, 7, 10, 11
- W012-Prime factorisation
- W013-Factors
- W014-Multiples
- W015-Comparing integers
- W016-Adding and subtracting integers
- W017-Multiplying and dividing integers
- W018-Number patterns
- W019-Picturing fractions
- W020-Equivalent fractions
- W021-Improper fractions and mixed numbers
- W022-Addition of fractions
- W023-Subtraction of fractions
- W024-Fraction of a whole number
- W025-Multiplication of fractions
- W026-Division of fractions
- W027-Percentages and fractions
- W028-Percentages of an amount
- W029-Decimals - place value and rounding
- W030-Decimals addition and subtraction
- W031-Decimals multiplication
- W032-Decimals division
- W033-Decimals and fractions conversion
- W034-Angle types
- W035-Measuring angles
- W036-Drawing angles with a protractor
- W037-Triangle types
- W038-Angle sum in a triangle
- W039-Quadrilateral types
- W040-Angle sum in a quadrilateral
- W041-Angles at a point
- W042-Angles on parallel lines
- W043-Transformations
- W044-Metric units of length
- W045-Perimeter
- W046-Area
- W047-Volume of prisms
- W048-Capacity
- W049-Mass
- W050-Algebra - Like terms 1
- W051-Algebra - Like terms 2
- W052-Algebra - Multiplying pronumerals
- W053-Expansion
- W054-Substitution
- W055-Equations - checking solutions 1
- W056-Equations - checking solutions 2
- W057-Equations - Set 1
- W058-Equations - Set 2
- W059-Equations - Set 3
- W060-Input output tables
- W061-Graphs Set 1
- W062-Graphs Set 2
- W063-Mean median and mode
- W064-Plotting points Quadrant 1
- W065-Probability
- W066-Whole number operations

- W067-Factors and multiples
- W068-Powers
- W069-Roots
- W070-Directed numbers
- W071-Fractions revision
- W072-Decimals - recurring and rounding
- W073-Decimals revision
- W074-Percentages
- W075-GST mark-up and discount
- W076-Ratio and rates
- W077-Ratio and rates Unitary method
- W078-Angles - calculating
- W079-Congruent figures
- W080-Similar figures
- W081-Similar figures calculations
- W082-Perimeter of polygons
- W083-Circumference
- W084-Area of polygons
- W085-Area of a circle
- W086-Surface area
- W087-Volume
- W088-Time
- W089-Pythagoras
- W090-Algebra revision
- W091-Algebraic fractions
- W092-Equations
- W093-Inequalities
- W094-Indices 1
- W095-Indices 2
- W096-Indices 3
- W097-Interpreting graphs
- W098-Plotting linear graphs 1
- W099-Plotting linear graphs 2
- W100-Plotting linear graphs 3
- W101-Sketch graphs using intercepts
- W102-Tally and frequency
- W103-Probability
- W104-Venn diagrams
- W105-Simplifying surds
- W106-Operations with surds
- W107-Zero negative and fractional indices
- W108-Cones and spheres TSA and volume
- W109-CAS triangle solving
- W110-Circle properties
- W111-Trigonometry
- W112-Rearranging formulae
- W113-Linear graphs
- W114-Simultaneous equations
- W115-Completing the square
- W116-Quadratic graphs
- W117-Expanding DOS and perfect squares
- W118-Expanding quadratics 1
- W119-Expanding quadratics 2
- W120-Factorising quadratics 1
- W121-Factorising quadratics 2
- W122-Quadratic equations by factorising
- W123-Simple and compound interest
- W124-Discriminant and quadratic formula
- W125-Plotting quadratic graphs 1
- W126-Plotting quadratic graphs 2
- W127-Plotting quadratic graphs 3
- W128-Converting units of area
- W129-Converting units of volume
- W130-Common conversions
- W131-Rounding whole numbers



## Activities

A001-Palindromes  
A002-Magic square construction  
A003-Sieve of Eratosthenes  
A004-Tangle tables 1  
A005-Tangle tables 2  
A006-Tangle tables 3  
A007-Tangle tables 4  
A008-Tangle tables 5  
A009-Tangle tables 6  
A010-Squares and square roots  
A011-Happy numbers  
A012-Line up - Integer ranges  
A013-Constructing 30 and 60 degree angles with a ruler  
A014-Bisecting with a straight edge  
A015-Constructing graphs Part 1  
A016-Constructing graphs Part 2  
A017-Plotting points in 4 quadrants  
A018-Drawing Stem plots  
A019-Analysing stem plots  
A020-Pascals triangle  
A021-7-11-13 division trick  
A022-Mystic rose  
A023-Four fours  
A024-Goldbachs conjecture  
A025-Five attached stamps  
A026-Picks theorem  
A027-Puzzling sums  
A028-The 1089 number trick  
A029-Fibonacci numbers  
A030-Extreme place value  
A031-Adding a million numbers  
A032-Binary numbers  
A033-Magic cards  
A034-The four colour problem  
A035-Perfect numbers  
A036-Angle sum in a polygon  
A037-Mid points of a quadrilateral  
A038-Billiard ball bounces 1  
A039-Billiard ball bounces 2  
A040-Dot grid triangles  
A041-Dot grid perimeter puzzle  
A042-Dot grid area puzzle  
A043-Multiplication of integers grid  
A044-Decimals - fractions reference table  
A045-Directed numbers alt method  
A046-Zig zag paths  
A047-Euler's law 2D  
A048-Euler's law 3D  
A049-Maximum tray volume  
A050-Compass constructions  
A051-Bricklayer problem  
A052-Line designs  
A053-Angles on a 4 x 4 dot grid  
A054-Cardoid and nephroid  
A055-Battleships game  
A056-Sprouts game  
A057-3D solids  
A058-Polyhdera specifications  
A059-Polyhdera construction  
A060-Star polygons  
A061-Triangular numbers  
A062-Euler paths and circuits  
A063-Tangram puzzle  
A064-Magic egg puzzles  
A065-Pentominoes  
A066-Measuring length  
A067-Map coordinates  
A068-Best buys  
A069-Alphabet symmetry  
A070-Lines of symmetry  
A071-Polygon symmetry  
A072-Tesselation codes  
A073-8 x 8 magic square

A074-Four attached stamps

A075-Game of 50  
A076-Apothem  
A077-Estimating pi - using poly circumference  
A078-Game of Hex  
A079-Hexominoes and symmetry  
A080-Koch snowflake  
A081-Prime formula  
A082-Primes and odd numbers  
A083-Sum of 4 squares  
A084-Sum of cubes  
A085-Spiral of Archimedes  
A086-Regions in a circle  
A087-Triangles within a triangle  
A088-Geometric designs  
A089-Pentahexes  
A090-Napiers rods  
A091-Russian multiplication  
A092-Making pi  
A093-Polar spiral  
A094-Conic 1 - Parabola  
A095-Conic 2 - Ellipse  
A096-Conic 3 - Hyperbola  
A097-Sine graph plotting  
A098-Cosine graph plotting  
A099-Tangent graph plotting  
A100-Mobius strip  
A101-Magic squares puzzles  
A102-Pythagoras proofs  
A103-Rectangle diagonals  
A104-Exponential graph plotting  
A105-ABC symbol  
A106-Super ellipse  
A107-Gradient graph  
A108-Kaleidoscope designs  
A109-Plotting x to the power of n  
A110-Infinity symbol  
A111-Heptagon shading  
A112-Limacon polar equation  
A113-Polytans  
A114-Polyiamonds  
A115-Polygon designs  
A116-Integration 1  
A117-Integration 2  
A118-Integration 3  
A119-Circle graphs  
A120-Absolute value graphs  
A121-Integration 4  
A122-Gradient of chords and tangent  
A123-Origami Bi-pyramid  
A124-Interesting inequalities  
A125-Origami cube  
A126-Origami dodecahedron  
A127-Origami tray  
A128-Origami tray using A4 paper  
A129-Whirlybird  
A130-Origami plane  
A131-Buffons needles  
A132-Rotating ring of tetrahedra  
A133-Stella octangula  
A134-Trihexaflexagon  
A135-Stellated dodecahedron  
A136-Compound of five tetrahedra  
A137-Circumference length  
A138-Compound of 5 octahedra  
A139-Great dodecahedron  
A140-Origami cube from a square  
A141-Mega maze  
A142-Circular maze  
A143-Triangular maze  
A144-Hex maze  
A145-Penrose tilings  
A146-Penrose tilings - Rhombii  
A147-Trisecting triangle angles  
A148-Knights tour

A149-Viewing angle

A150-Triangle centres  
A151-The sine ratio  
A152-The cosine ratio  
A153-The tangent ratio  
A154-Squares on a chessboard  
A155-Game of squares  
A156-Game of SOS  
A157-Game of Side to side  
A158-Game of Join the line  
A159-Game of 5 in a row  
A160-Game of Target corner  
A161-Chaos theory Part 1  
A162-Chaos theory Part 2  
A163-Sine and sawtooth graphs  
A164-Square wave  
A165-Hailstone numbers  
A166-Polar petals  
A167-A pentagonal tiling  
A168-A non-regular hexagonal tiling  
A169-Circle centres  
A170-Cyclic quadrilaterals  
A171-Gradients of perpendicular lines  
A172-Area of an ellipse  
A173-Lucas numbers  
A174-Tangential quadrilaterals  
A175-Intersection game  
A176-Pappus theorem  
A177-Armstrong numbers  
A178-Point in an equilateral triangle  
A179-Fermat point  
A180-Fence and river  
A181-Limits  
A182-Topological trees  
A183-Same birthday probability  
A184-Can 64 equal 65  
A185-Golden rectangles  
A186-Finding e  
A187-Infinite geometric series  
A188-Pyramid and prism volume compared  
A189-Reassembling angles  
A190-Treasure hunt bearings  
A191-Bank statement  
A192-Pythagorean triples formula  
A193-Rooks tour  
A194-Enlarging a map of Australia  
A195-Roman numerals  
A196-Secret codes using a key  
A197-Maths terms crossword  
A198-Geometry wordsearch  
A199-Maximum rectangle area  
A200-Game of 15  
A201-The abacus  
A202-Dilation transformations  
A203-Series for e  
A204-Origami cup  
A205-Numbers crossword  
A206-Origami tetrahedron  
A207-Rotating origami flower  
A208-Origami triangle box  
A209-Origami envelope  
A210-Origami frog  
A211-Maximum tray volume from A4  
A212-Equations - forward tracking  
A213-Equations - back tracking  
A214-Equations - more back tracking  
A215-Tyler pattern 1  
A216-Tyler pattern 2  
A217-Tyler pattern 3  
A218-Tyler pattern 4  
A219-Tyler pattern 5  
A220-Tyler pattern 6  
A221-Tyler pattern 7  
A222-Tyler pentagons  
A223-Tyler pattern 8

**Posters**

- P001-Area - WHITE BG  
P002-Area  
P003-Circle properties -WHITE BG  
P004-Circle properties  
P005-Function transformations 1  
P006-Function transformations 2  
P007-Geometric designs  
P008-Graph ruler  
P008-Impossible figures WHITE BG  
P009-Koch  
P010-Line designs  
P011-Linear radian scale - with curves  
P012-Maths-Pro  
P013-Maths-Rules  
P014-OHSAHCOAT  
P015-Optical illusions  
P016-Platonic and Archimedean polyhedra  
P017-Polygon  
P018-Polyhedra DIAGRAMATIC  
P019-Polyhedra WHITE BG DIAGRAMATIC  
P020-Super models PHOTOS  
P021-Tesellations  
P022-Times tables  
P023-Volume  
P024-Powers of ten prefixes  
P025-Triangle centres  
P026-Golden spiral  
P027-Roman numerals  
P028-Mathematics symbols  
P029-Geometry symbols  
P030-Amazing equation  
P031-Quadratics features  
P032-Angle types  
P033-Angles on parallel lines  
P034-Interval notation  
P035-Impossible figures WHITE BG  
P036-Simple v compound interest  
P037-Greek alphabet  
P038-Index laws  
P039-Area of a circle  
P040-Prime factors  
P041-Triangle area formula  
P042-Trapezium area formula  
P043-Number types  
P044-Parallelogram area formula  
P045-Triangle types  
P046-Quadrilateral types  
P047-Kite area formula  
P048-Times tables grid  
P049-Discriminant  
P050-Co-ordinate geometry  
P051-Prime numbers chart  
P052-Probability scale  
P053-Maths topics  
P054-Normal curve areas 1dp  
P055-Normal curve areas 2dp  
P056-Set notation  
P057-Commutative law etc  
P058-Transformations  
P059-Units conversion  
P060-Pythagoras theorem  
P061-Divisibility tests  
P062-Trigonometry  
P063-Sine and cosine rules  
P064-Compass directions  
P065-Correlation scatter graphs
- P066-Trig graphs basic  
P067-Cubic functions  
P068-Exponential and log graphs  
P069-Hyperbola  
P070-Truncus  
P071-x to the power of n  
P072-Circle and ellipse graphs  
P073-Absolute value graph  
P074-Scale factor  
P075-Parabola  
P076-Ellipse  
P077-Hyperbola  
P078-Gradient function  
P079-General trig graph  
P080-Quartic functions poster

## **Appendices**

- Appendix 01 - Cartesian grid 1st quadrant
- Appendix 02 - Cartesians grids x 6 - 4 quadrants
- Appendix 03 - Centimetre square grid paper
- Appendix 04 - Isometric grid paper
- Appendix 05 - Two 10 x 10 grids
- Appendix 06 - 3 cm Triangles x 48
- Appendix 07 - 3 cm Squares x 24
- Appendix 08 - 3 cm Pentagons x 12
- Appendix 09 - 3 cm Hexagons x 9
- Appendix 10 - 3 cm Octagons x 6
- Appendix 11 - 3 cm Decagons x 6
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- Appendix 13 - The first 500 primes
- Appendix 14 - 1000 random digits
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- Appendix 20 - Powers tables
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