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|  recognise and transform multiplicative relation:a=bc; a/b=c; a/c=b | multiplication facts written several ways |
| radius of circle | recognise right angled triangles in standard orientation |
| express hypotenuse as multiple of height/base in rt-Δ | recognise right angled triangles in all orientations |
| recognise right angled triangles in unit circle with radius as hypotenuse | express height/base as multiple of hypotenuse in rt-Δ |
| know and use standard language for sides of rt-Δ | SOHCAHTOA |
| scale lengths by scalars > and < 1 | recognise 'nested' similar triangles |
| recognise and use ratios within and between similar triangles | recognise and use proportionality in similar triangles |
| understand the concept of angle | use angles < 90ᵒ in triangles. |
| use angles < 90ᵒ in unit circle with rotating radius | use angles > 90ᵒ in unit circle with rotating radius |
| use angles > 90ᵒ in triangles | use Pythagoras' theorem where appropriate |
| recall or construct sides of standard triangles: 30ᵒ/60ᵒ and 45ᵒ | use letters as unknowns |
| use letters as variables | use letters as placeholders |
| understand functions as input/output processes | understand functions as relations between variables |
| understand functions as a calculator instruction | understand that sin, cos, tan are names for ratios |
| area of squares using multiplication and notation | area of squares with squared paper |
| area of squares not on squared paper | area of squares with squared paper, but with sides not on the lines |
| double/halve | double and double (halve and halve) again ... |
| ΔABC has right-angle at B. Angle ABC is 35ᵒ and CB is 10 cm. Find AB. | solve problems involving height and angle of elevation using tangent |
| C:\Users\Anne\Documents\trig\diploma2.jpg | C:\Users\Anne\Documents\trig\diploma2.jpg |
| C:\Users\Anne\Documents\trig\diploma2.jpg | an isosceles triangle has base angles of 30ᵒ and a base length of 20 cm. Find the area. Why can't we apply the tangent ratio immediately? How can we give an accurate answer? |
| explain why the tangent of 45ᵒ is 1 | Peter wants to find the tangent of 15ᵒ so keys it into the calculator and the display shows -0.8559. What has gone wrong? |
| know the range of values that can be taken by sin, cos and tan | know why sin and cos have finite ranges of values |
| C:\Users\Anne\Documents\trig\diploma~.jpg | C:\Users\Anne\Documents\trig\diploma~.jpg |
| C:\Users\Anne\Documents\trig\diploma~.jpg | know several ways to find angles of a triangle whose sides are 5 cm., 12 cm. and 13 cm. |
| recognise and use graphs of sin, cos and tan to solve equations | know that tan x = 1 has an infinite class of solutions, and why |
| construct and recognise transformations of sine graphs | find and use right angled triangles in 3-d objects, e.g. cones |

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| unit fractions of length | unit fractions of number |
| non-unit fractions <1 of length | non-unit fractions <1 of number |
| units | measuring length |
| fractions of length | multiplying and dividing lengths |
| fractions as division | division as fractions |
| multiplying a unit of measure has the same effect as multiplying a whole measurement | changing units |
| measuring growth | shrinking and growing as multiplication/division |
| comparing lengths | so much per so much |
| per cent | rate of change |
| tangent of curve | gradient of straight line  |
| proportionality as y=kx | proportionality as y = kx used to calculate sides of rt-Δ |
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