**Design & Technology**

**Mathematics for D&T –** Trigonometry

**Materials required for questions**

* Pencil
* Rubber
* Calculator

**Instructions**

* Use black ink or ball-point pen
* Try answer all questions
* Use the space provided to answer questions
* Calculators can be used if necessary

**Advice**

* Marks for each question are in brackets
* Read each question fully
* Try to answer every question
* Don’t spend too much time on one question

**Good luck!**

**Q1.** A manufacturer has designed a component but has forgotten to measure the height of the component. What is the perpendicular height of the component **(3 marks)**

**A triangle with a measurement

Description automatically generated with medium confidence**

**Q2.** A ladder rests on a wall. The ladder is safe between an angle of 72 to 78 degrees. Is the ladder safe **(3 marks)**

**A drawing of a triangle

Description automatically generated**

**Q3.** A vertical milling machine is cutting a channel through some material. Calculate the depth of the cut. All measurements are inmm **(4 marks)**

**A drawing of a line drawing of a line drawing

Description automatically generated with medium confidence**

**Q4.** A shallow roof trust is being designed for a new school. Calculate the total perimeter of the roof truss and calculate the shallow roof angles. All measurements are in mm **(5 marks)**

**A drawing of a bridge

Description automatically generated**

**Q5.** Calculate angle A. All measurements are in mm **(3 marks)**

**A diagram of a triangle

Description automatically generated**

**Answers**

**Q1.**

606.2mm

**Q2.**

58.6o – not safe

**Q3.**

298.9mm

**Q4.**

1705.9mm

**Q5.**

Total angle = 58.0

Angle A = 21.1