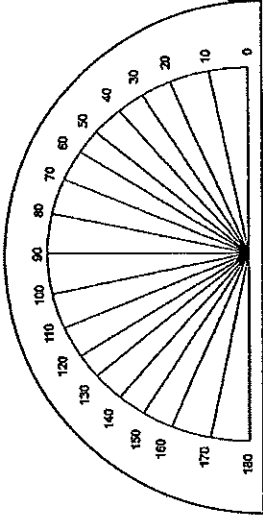


Precision Measurement

2 Marks

141

28. State the precision and uncertainty of the protractor.

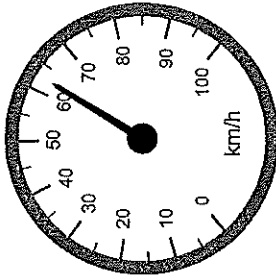


Precision: _____

Uncertainty: _____

2 Marks

26. Refer to the following diagram of a speedometer.



137

A) State the precision of the speedometer. (1 mark)

138

B) State the uncertainty of the speedometer. (1 mark)

2 Marks

134

27. An odometer is used to measure the distance a car travels. The trip odometer reads 947.2 km. State the precision and uncertainty of the odometer.

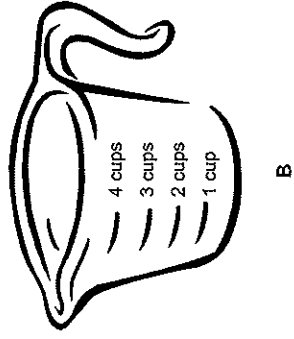
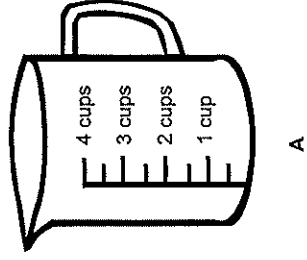
Precision: _____

Uncertainty: _____

1 Mark

139

27. Johnny needs to measure $1\frac{1}{4}$ cups of water to make bread. Justify which of the following measuring cups is more precise.



2 Marks

28. Jill buys a roll of wallpaper. She uses a measuring device with a precision of 1 cm to measure and cut a 95 cm piece.

140

A) State the maximum length of the cut piece of wallpaper. (1 mark)

141

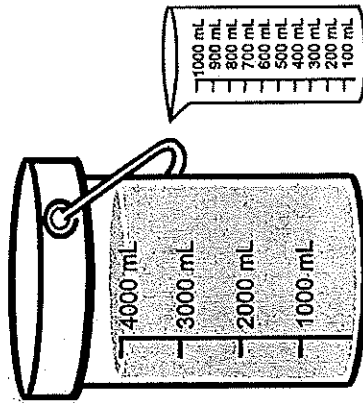
B) State the minimum length of the cut piece of wallpaper. (1 mark)

2 Marks

142

29. Colin has a bucket, marked in 1000 mL increments, that he fills with 4000 mL of liquid fertilizer. He wants to remove 300 mL of the liquid fertilizer. He uses a 1000 mL container marked in 100 mL increments.

Calculate the remaining amount of mixture that will be in the bucket in the format: measurement \pm uncertainty

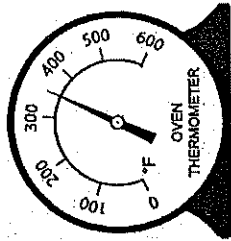


Precision Measurement

2 Marks

138

27. State the precision and uncertainty of the oven thermometer shown below.



Precision: _____

Uncertainty: _____

28

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1 Mark

139

28. A student measured a piece of rope using 5 different measuring tapes with the same precision. He recorded the following measurements:

5.34 m	5.32 m	5.37 m	5.34 m	5.38 m
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State the precision of the measuring tapes.

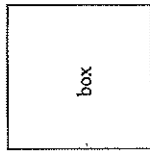
Essential Mathematics: Student Booklet (June 2016)

29

2 Marks

143

31. Rajiv places 4 boxes side by side. Each box is built to measure $12'' \pm \frac{1}{32}''$ in width. Calculate the combined width of the boxes in the format: **measurement \pm uncertainty**



$$12'' \pm \frac{1}{32}''$$

2 Marks

141

30. A company makes sticks for frozen fruit snacks with a measurement of $15.5 \text{ cm} \pm 0.2 \text{ cm}$.
A) State the maximum length. (1 mark)

142

- B) State the minimum length. (1 mark)

Precision Measurement

2 Marks

136

29. The width of a door frame has a nominal value of 36 inches (which is halfway between the minimum and maximum value). The tolerance is 0.5 inches. State the minimum and maximum values of the width of the door frame.

Maximum: _____

Minimum: _____

2 Marks

140

27. Cailyn works as a production engineer. She is working with a machine part that has a tolerance of 0.04 mm and a nominal value of 0.50 mm which is halfway between the maximum and minimum values. State the maximum and minimum values of the machine part.

Maximum: _____

Minimum: _____

2 Marks

137

30. A welding company has determined that the desired length of a steel arm is $12 \text{ cm} \pm 2.5 \text{ cm}$. The tolerance is given in the form *nominal value*^{+tolerance}₋₀. State the nominal value and tolerance.

nominal value: _____

tolerance: _____

1 Mark

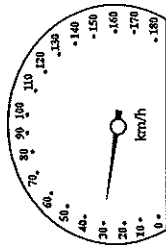
144

31. The maximum amount of stuffing that can fit in a pillow is 1500 grams. The tolerance is 100 grams. State the nominal value (which is halfway between the minimum and maximum values).

1 Mark

140

29. The speed limit in a school zone is 30 km/h. Evan's speedometer reads 30 km/h. Explain why Evan may be pulled over for exceeding the speed limit using one of the following concepts: accuracy, tolerance, uncertainty, or precision.



1 Mark

143

30. Ralph is painting his living room with a custom colour that was created at the paint store by mixing colours. He did not buy enough paint and needs to buy more.

Explain why a degree of accuracy is needed when mixing additional paint to match his original colour.

1 Mark

143

30. Chris owns a candy factory that specializes in making chocolate candies. Explain why Chris needs to be very accurate when measuring his ingredients.

2 Marks

135

28. A metre stick is left outside in the sun and it expands. Explain how this will affect the stick's accuracy and precision.

Accuracy:

Precision: