

## ASSESSMENT 2

October 24<sup>th</sup> 2012

### Instructions:

1. Write your name, your student number, your programme and your lecturer's name in the spaces provided below.
2. Attempt all questions. Marks are as indicated.
3. Show your work in the space provided. You may use the back of the each sheet of this paper for rough work. If required, you may obtain more rough work paper from the invigilator, but all rough work must be handed up at the end of the exam.
4. You may not leave the Examination Centre until the time allocated has elapsed.

Name: \_\_\_\_\_

Student Number: \_\_\_\_\_

Programme: \_\_\_\_\_

Lecturer: \_\_\_\_\_

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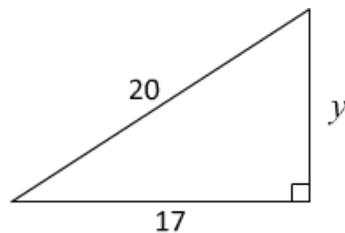
**NB:** This paper must not be taken from the Examination Centre.

In each of questions 1 to 6, please circle the correct answer.

1. Find the value of  $\frac{\sin(67^\circ) + \sin(43^\circ)}{\cos(60^\circ)}$  correct to 3 decimal places. [# marks]

- (a) 3.205      (b) 2.523      (c) 2.285      (d) 1.772

2. Calculate the value of  $y$  correct to 3 significant figures: [# marks]



- (a) 26.2      (b) 18.5      (c) 10.5      (d) 1.73

3. Convert  $36^\circ 53'$  to radians, giving your answer correct to 4 decimal places. [# marks]

- (a) 11.740      (b) 0.6347      (c) 0.651      (d) 0.6437

4. In measuring the volume of a liquid, I record the value as 148 ml rather than the correct value of 142 ml. Find the percentage error in my measurement. [# marks]

- (a) 4.05%      (b) 4.2%      (c) 2.8%      (d) 4.5%

5. Find the arithmetic mean of the array of numbers 3, 5, 11, 7, 4. [# marks]

- (a) 5.3      (b) 6.0      (c) 6.6      (d) 6.4

6. Six workers have the following earnings in a particular week:

€345, €410, €360, €480, €550, €450

Find the median earnings for this group of workers. [# marks]

- (a) €432.50      (b) €430      (c) €510      (d) €635

In each of question 7 to 10, please write your solution in the space provided below the question.

You must show full workings.

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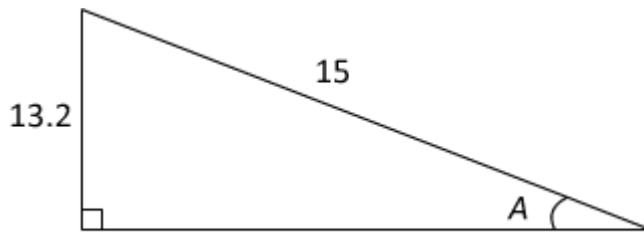
7. (a) Find an approximate value for  $\frac{2.8 \times 0.317}{0.481 - 0.002}$ , showing clearly the method used. [# marks]

(b) Use a calculator to find the value of  $\frac{2.8 \times 0.317}{0.481 - 0.002}$ , correct to four significant figures. [# marks]

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8. A package measures 150 mm x 150 mm x 100 mm. A proposed re-design will increase each of these dimensions by 5%. Find the resulting increase in the volume of the package. [# marks]

9.



Find the value of A, correct to the nearest degree.

[# marks]

10. Calculate the standard deviation of the array of numbers

4.2, 3.7, 6.1, 5.5, 4.5

Use the formula  $SD = \sqrt{\frac{\sum (x_i - \bar{x})^2}{n}}$ . Full workings must be shown.

[# marks]