

**Q1.** Use your calculator to work out

$$\sqrt{12.63 + 18^2}$$

Write down all the figures on your calculator display.

.....

**(Total 2 marks)**

**Q2.** Use your calculator to work out

$$\frac{\sqrt{6700} - 2.38^2}{3.6^2 + 5.71}$$

You must give your answer as a decimal.  
Give your answer to three significant figures.

.....

**(Total 3 marks)**

**Q3.** Use a calculator to work out

$$\sqrt{\frac{21.6 \times 15.8}{3.8}}$$

(a) Write down all the figures on your calculator display.

.....

(2)

(b) Give your answer to part (a) correct to 3 significant figures.

.....

(1)

(Total 3 marks)

M1.

Working	Answer	Mark	Additional Guidance
$= \sqrt{336.63}$	18.347....	2	$\frac{7\sqrt{687}}{10}$ <b>B2</b> for 18.347(47939) or $\frac{7\sqrt{687}}{10}$ <b>(B1</b> for 18.3... or 336.63 seen)
<b>Total for Question: 2 marks</b>			

M2.

Working	Answer	Mark	Additional Guidance
	4.08	3	<b>B1</b> for 5.6644 or 81.8535(2772...) or 76.1(8912772...) or 18.67 <b>B1</b> for 4.08(0831694) <b>B1</b> cao
<b>Total for Question: 3 marks</b>			

M3.

	Working	Answer	Mark	Additional Guidance
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(a)	$\sqrt{\frac{21.6 \times 15.8}{3.8}} =$	9.476841579	2	<b>M1</b> for 89.81052 .... or 341.28 or 4.86151... $\frac{8532}{95}$ or $\frac{8532}{25}$ or $\frac{8532}{95}$ or $\frac{8532}{25}$ <b>A1</b> for 9.47684..... SC: <b>B1</b> for 9.476841579... truncated or rounded to at least 1 decimal place
(b)	$\sqrt{89.81052632}$	9.48	1	<b>B1</b> ft from (a) with at least 4 significant figures
<b>Total for Question: 6 marks</b>				

**E1. Foundation**

This question was very poorly answered even though it was testing the use of a calculator on a calculator paper. The modal answer was for finding the square root of 12.63 and then adding the square of 18. Another group of candidates calculated  $12.63 + 18^2$  but then did not square root their answer. Unfortunately these answers were incorrect. Only 18% of candidates gave the fully correct answer whilst a further 11% gained 1 mark usually for calculating 336.63 or writing the answer as 18.3 rather than giving all the figures on their calculator display as required.

**Higher**

The great majority of candidates either scored full marks for a correct answer or no marks for evaluating  $\sqrt{2.63} + 18$  rather than the expression given. Most of the candidates who failed to gain any marks wrote an answer down without any intermediate working. If they had written down some working they may have given thought to the order of operations required. Despite the instruction to write down all the figures from the calculator display, a significant proportion of candidates went on to round their answer. Further rounding was ignored if candidates had written the full

version in the working space. Some calculators give the answer in the form  $\frac{7\sqrt{687}}{10}$ . This was accepted. In this question, the first on the paper, 59% of candidates were awarded 2 marks, but 33% of candidates could not be awarded any marks.

**E3.** Only just under 40% of candidates were able to attain full marks for this very early question. Marks were generally lost due to an inability to use a calculator correctly. Taking the square root of just the numerator rather than the whole fraction was the most common error.