* 1. Non Right angled Trig

Answers

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| Question | Main points of expected responses |
| 1 | •1  substitute into  formula•2  correct answer | **•1** •2 653 m2 |
| 2 | •1 use correct formula•2  substitute correctly•3  process to *s*2•4 take square root  | •1 selects cosine rule**•2** •3 7 089•4 84·1 metres (rounding not  required) |
| 3 | •1 finds angle U•2 states bearing from  U |  then valid steps below•1 26·8°•2 153·2o (rounding not required) |
| 4 | •1 substitute into  formula•2 correct answer | •1 •2 219 m2 |
| 5 | •1 use correct formula•2 substitute correctly•3 process to a2•4 take square root  | •1 selects cosine rule•2 •3 21517•4 146·7 metres (rounding not  required) |
| 6 | •1 finds angle P•2 states bearing from  P |   then valid steps below•1 29·7°•2 150·3o (rounding not required) |
| 7 | •1 substitute into  formula•2 correct answer | •1 •2 330 m2 |
| 8 | •1 use correct formula•2 substitute correctly•3 process to t2•4 take square root  | •1 selects cosine rule•2 •3 58·53•4 7·7 metres (rounding not  required) |
| 9 | •1 finds angle K•2 states bearing from  K |   then valid steps below•1 38°•2 142o (rounding not required) |

1.2 Vectors

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| 1 | •1  draws 3***u*** •2 applies head-to-tail  method when adding *v* •3 draws resultant from  tail of 3***u*** to head of  ***v***.  | 3***u******v***3***u + v*** |
| 2 | •1 correct point | •1 (3, 3, 8) |

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| 3 | •1 add to get resultant•2 correct answer | **•1** **•2**  |
| 4 | •1 correct scalar  multiplication then  addition•2 calculate magnitude•3 correct answer | **•1** **•2** $\sqrt{4^{2}+6^{2}}$**•3**  |
| 5 | •1  draws 2***a*** •2 applies head-to-tail  method when adding 2***b***  •3 draws resultant from  tail of 2***a***  to head of  2***b***   | 2***a***2***a +*** 2***b***2***b*** |
| 6 | •1 correct point | •1 (4, 4, 10) |

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| 7 | •1 add to get resultant•2 correct answer | **•1** **•2**  |
| 8 | •1 correct scalar  multiplication then  addition•2 calculate magnitude•3 correct answer | **•1** **•2** $\sqrt{4^{2}+6^{2}}$**•3**  |

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| 9 | •1  draws ***k*** •2 applies head-to-tail  method when adding 2***l*** •3 draws resultant from  tail of ***k***  to head of  2***l***   | ***k***2***l*** |
| 10 | •1 correct point | •1 (4, 4, 0) |

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| 11 | •1 add to get resultant•2 correct answer | **•1** **•2**  |
| 12 | •1 correct scalar  multiplication then  addition•2 calculate magnitude•3 correct answer | **•1** **•2** $\sqrt{4^{2}+6^{2}}$**•3**  |

* 1. Fractions and Percentages
1. Answers:

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| **1** | •1 start calculation•2 process calculation•3 correct answerNote: repeated subtraction method can be used  | •1 0·88•2 24 000 × 0·885•3 £12665·57 equivalent |
| **2** | •1 area calculation•2 correct answer | **•1** **•2** m² |
| **3** | #2.1 appropriate strategy•1 correct answer | #2.1 eg 1 + 0·15 *x* = £2760•1 £2400 |
| **4** | •1 start calculation•2 process calculation•3 correct answerNote: repeated addition method can be used  | •1 1·036•2 142 000 × 1·036³•3 £157 894 equivalent |
| **5** | •1 area calculation•2 correct answer | •1 •2 m² |
| **6** | #2.1 appropriate strategy•1 correct answer | #2.1 eg 1 + 0·35 x = £3510•1 £2 600 |
| **7** | •1 start calculation•2 process calculation•3 correct answerNote: repeated addition method can be used  | •1 0·77•2 2 000 × 0·77³•3 913g equivalent – 3  |
| **8** | •1 area calculation•2 correct answer | •1 •2 m² |
| **9** | #2.1 appropriate strategy•1 correct answer | #2.1 eg (1 – 0·45) x = £6 875•1 £12 500 |