* 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**  **•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**  **•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**  **•3** |

* 1. Fractions and Percentages

1. Answers:

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| **1** | •1 start calculation  •2 process calculation  •3 correct answer  Note: 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 answer  Note: 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 answer  Note: 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 |