

Topic Test 1 Mark Scheme

Trigonometry recap and extension - Higher

| Q | Answer | Mark | Comments |
|---|---|-------|----------|
| 1 | $\frac{4}{\sqrt{41}}$ | B1 | |
| 2 | $18 \div \cos 31$ | M1 | |
| | [20.99, 21] | A1 | |
| 3 | $\tan x = \frac{23}{30}$ or $\tan^{-1}\left(\frac{23}{30}\right)$ | M1 | |
| | [37, 37.5] | A1 | |
| 4 | Alternative method 1 | | |
| | $\sqrt{25^2 - 7^2}$ or $\sqrt{576}$ | M1 | |
| | 24 | A1 | |
| | $\frac{1}{2} \times 14 \times$ their 24 | M1dep | |
| | 168 | A1 | |
| | Alternative method 2 | | |
| | $\cos^{-1} \frac{7}{25}$ | M1 | |
| | [73.7, 74] | A1 | |
| | $\frac{1}{2} \times 14 \times 25 \times \sin$ (their 73.70 | M1dep | |
| | 168 | A1 | |

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| 5 | Alternative method 1 | | |
| | $\sqrt{5^2 + 12^2}$ or 13 or $\sqrt{5^2 + 15^2}$ or 15.8 or $\sqrt{12^2 + 15^2}$ or 19.2 | M1 | |
| | $\sqrt{\text{their } 13^2 + 15^2}$ or $\sqrt{\text{their } 15.8^2 + 12^2}$ or $\sqrt{\text{their } 19.2^2 + 5^2}$ | M1dep | |
| | [19.8, 20] | A1 | |
| | Alternative method 2 | | |
| | $\sqrt{5^2 + 12^2 + 15^2}$ | M2 | |
| | [19.8, 20] | A1 | |
| 6 | $(BC) = 12 \div \tan 35$ or $(AB) = 12 \div \tan 42$ | M1 | |
| | $AB = [13, 13.33]$ | A1 | |
| | $BC = [17, 17.14]$ | A1 | |
| | $\sqrt{\text{their } 17^2 + \text{their } 13^2}$ | M1dep | |
| | [21.7, 22] | A1 | |
| 7 | $\sin A = \frac{a}{c}$ and $\cos A = \frac{b}{c}$ | M1 | |
| | $\left(\frac{a}{c}\right)^2 + \left(\frac{b}{c}\right)^2 = \frac{a^2 + b^2}{c^2}$ | M1 dep | |
| | $\frac{a^2 + b^2}{a^2 + b^2} = 1$ | A1 | |