

| Q | Marking instructions | AO | Marks | Typical solution |
|-------------------------|---|------|----------|--|
| 5 | Recalls $\tan 15^\circ$ as $\frac{\sin 15^\circ}{\cos 15^\circ}$ OE PI by division of given surd expressions ACF | 1.2 | B1 | $\tan 15^\circ = \frac{\sin 15^\circ}{\cos 15^\circ}$ $= \frac{\sqrt{6} - \sqrt{2}}{\sqrt{6} + \sqrt{2}} \times \frac{\sqrt{6} - \sqrt{2}}{\sqrt{6} - \sqrt{2}}$ $\frac{6 - 2\sqrt{12} + 2}{6 - 2} = \frac{8 - 4\sqrt{3}}{4}$ $= 2 - \sqrt{3}$ |
| | Multiplies top and bottom by conjugate of their denominator | 1.1a | M1 | |
| | Expands either the denominator or the numerator correctly ACF | 1.1b | A1 | |
| | Completes derivation of required expression from correct numerator and denominator AG | 2.1 | R1 | |
| Question 5 Total | | | 4 | |