| Question | Answer | Marks | Guidance |
|---|---|---|---|
| 6(c) | $\frac{1}{2}(2a)^2 \sin\frac{\pi}{3}$ | **B1** | **FT** *their* $\frac{\pi}{3}$ |
| | $\frac{1}{2}a^2\frac{\pi}{3}$ | **B1** | **FT** *their* $\frac{\pi}{3}$ |
| | $\sqrt{3}a^2 - \frac{\pi a^2}{6}$ | **B1** | **FT** *their* $\frac{\pi}{3}$ |
| 7(a)(i) | ${}^8C_4$ | **M1** | For realisation that there are 4 places left and 8 people available to fill them |
| | 70 | **A1** | |
| 7(a)(ii) | 1 teacher on committee: 5 ways | **B1** | |
| | ${}^{12}C_8 - 5$ | **M1** | |
| | 490 | **A1** | |
| | Alternative<br><br>2 teachers: 70<br>3 teachers: 210<br>4 teachers: 175<br>5 teachers: 35 | **(2)** | **B1** for 2 correct cases |
| | 490 | **(B1)** | |
| 7(b) | $\frac{n!}{(n-5)!} = 6\frac{(n-1)!}{(n-1-4)!}$ | **B1** | |
| | $\frac{n}{(n-5)!} = \frac{6}{(n-5)!}$ | **M1** | For simplification of<br>either $n!$ and $(n-1)!$<br>or 'cancelling out' of the terms of $(n-5)!$ |
| | $n = 6$ | **A1** | nfww |
| 8(a) | $b = 2$ | **B1** | |
| | At $(0, 3)$: $3 = a + c$ | **B1** | |
| | At $\left(\frac{5\pi}{6}, 0\right)$: $0 = a\cos\frac{5\pi}{3} + c$<br>$0 = \frac{a}{2} + c$ | **M1** | For use of *their b* and $\left(\frac{5\pi}{6}, 0\right)$ |
| | $a = 6$<br>$c = -3$ | **A1** | For both |