# Temple Geometry — Rubric

| | Points | Section points |
|---|---|---|
| 1. OF = radius of large circle = 2r. FD = p, so OD is 2r - p | 2 | 2 |
| 2. $OB^2 = DO^2 - DB^2$ $= (2r - p)^2 - p^2$ $= 4r^2 - 4pr$ *Partial credit* for some correct work | 2 (1) | 2 |
| 3. $AO = r$ and $EO = p$, so $AE$ is $r - p$ | 1 | 1 |
| 4. $ED^2 = DA^2 - AE^2$ $= (r + p)^2 - (r - p)^2$ $= 4pr$ *Partial credit* for some correct work | 2 (1) | 2 |
| 5. Since $OB^2 = ED^2$, $4r^2 - 4pr = 4pr$ $\therefore 4r^2 = 8pr$ $\therefore r = 2p$ | 2 | 2 |
| 6. Shows that the Shaded area = $4\pi r^2 - 2\pi r^2 - 4\pi(r/2)^2 = \pi r^2$ | 1 | 1 |
| **Total Points** | | **10** |