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|---|---|---|---|---|---|
| **20** | (RRR:) $\frac{3}{12}\times\frac{2}{11}\times\frac{1}{10}$ $(=\frac{1}{220})$ **or**<br>$(0.25 \times 0.18\ldots\times 0.1 = 0.0045\ldots)$<br><br>(2R, 1G:) $\frac{3}{12}\times\frac{2}{11}\times\frac{9}{10}$ $(=\frac{9}{220})$ **or**<br>$(0.25 \times 0.18\ldots\times 0.9 = 0.0409\ldots)$<br><br>(2G, 1R:) $\frac{3}{12}\times\frac{9}{11}\times\frac{8}{10}$ $(=\frac{36}{220}=\frac{9}{55})$ **or**<br>$(0.25 \times\ 0.81\ldots\times 0.8 = 0.163\ldots)$<br><br>(GGG:) $\frac{9}{12}\times\frac{8}{11}\times\frac{7}{10}$ $(=\frac{84}{220}=\frac{21}{55})$<br>$(0.25 \times\ 0.72\ldots\times 0.7 = 0.381\ldots)$ | | 3 | M1oe | For an expression to find one of the stated probabilities |
| | $1-"\frac{1}{220}"$ (1 – "0.0045….")<br>or $"\frac{84}{220}"+3\times"\frac{36}{220}"+3\times"\frac{9}{220}"$<br>$(0.381\ldots+ 3 \times 0.163\ldots+ 3 \times 0.0409\ldots)$ | | | M1oe | Dep M1 Complete method |
| | *Correct answer scores full marks (unless from obvious incorrect working)* | $\frac{219}{220}$ | | A1oe | 0.9954….allow 0.99 (99%) or 0.995 (99.5%) |
| | | | | | **Total 3 marks** |