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| **Match-Up** | **Method of Differences** |

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| --- | --- | --- | --- | --- |
| **1** | $$\sum\_{r=1}^{n}\frac{1}{r(r+1)}$$ |  | **6** | $$\sum\_{r=1}^{n}\frac{1}{r^{2}+5r+6}$$ |
| **2** | $$\sum\_{r=1}^{n}\frac{1}{(r+1)(r+2)}$$ |  | **7** | $$\sum\_{r=5}^{n}\frac{2}{r^{2}+2r}$$ |
| **3** | $$\sum\_{r=1}^{n}\frac{2}{r(r+2)}$$ |  | **8** | $$\sum\_{r=2}^{n}\frac{2}{r^{2}-1}$$ |
| **4** | $$\sum\_{r=1}^{n}\frac{1}{(r+4)(r+5)}$$ |  | **9** | $$\sum\_{r=6}^{n}\frac{1}{(r+3)(r+4)}$$ |
| **5** | $$\sum\_{r=1}^{n}\frac{2}{(r+1)(r+3)}$$ |  | **10** | $$\sum\_{r=1}^{n}\frac{4}{4r^{2}+12r+5}$$ |
|  |  |  |  |  |
| **A** | $$\frac{n(3n+5)}{2(n+1)(n+2)}$$ |  | **F** | $$\frac{n}{3(n+3)}$$ |
| **B** | $$\frac{4n(8n+17)}{15(2n+3)(2n+5)}$$ |  | **G** | $$\frac{n}{n+1}$$ |
| **C** | $$\frac{n}{2(n+2)}$$ |  | **H** | $$\frac{(11n+17)(n-4)}{30(n+1)(n+2)}$$ |
| **D** | $$\frac{n-5}{9(n+4)}$$ |  | **I** | $$\frac{n(5n+13)}{6(n+2)(n+3)}$$ |
| **E** | $$\frac{(3n+2)(n-1)}{2n(n+1)}$$ |  | **J** | $$\frac{n}{5(n+5)}$$ |

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| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
|  |  |  |  |  |  |  |  |  |  |