Christmas quiz[1]

10 December 2001

1. What are the Carlow colours?

2. Find the Laplace transform of the function which is zero from zero to one, one from one to two, minus one from two to four and then zero from then on.

3. Solve $y'' + 3y' + 2y = \delta(t-2)$ with $y(0) = y'(0) = 0$.

4. Name two of these three films: (i) 'time to die', (twice), (ii) 'shut up and deal', (iii) 'I don't know what it is about saxaphone players'.

5. Calculate $t * e^{2t}$.

6. What is the next term in this sequence: 14, 23,28, 34, 42, 50, 59, 66, 72, 79, 86, 96, 103, ?

7. If
$$Y(z) = \frac{2z+1}{(z+1)(z-3)}$$
what is y_2?

8. Whose epitaph is
$$e^{i\pi} = -1$$

9. Solve $y_{k+2} + y_{k+1} - 2y_k = (-2)^k$ with $y_0 = y_1 = 0$.

10. This year the end of Ramadan is in December, name the last day of Ramadan, the last day of Advent and the Jewish festival which is also this month.

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