

25 Luminosity and flux – Part 1 — Answers

Answers

Work through these after trying the questions yourself.

25.1 The total power of radiation it gives out.

25.2 The watt (W).

25.3 $F = L/(4\pi d^2)$.

25.4 It falls to a quarter.

25.5 The inverse-square law.

25.6 $F \propto 1/d^2$. B is three times further, so we receive $1/3^2 = 1/9$ of the flux we get from A.

25.7 The more distant star is more luminous. Both give the same flux at us, but the further one's light has spread over a much larger sphere to arrive equally bright — so it must be putting out more power ($L = 4\pi d^2 F$).