Group 26
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Sheet 4

Assignment 3

a) In the continuous distribution, the cumulative distribution function (CDF) can be computed from PDF by integration. It gives the ~~area~~ area under the PDF from minus infinity to x.

$$P(X) = Pr\{X \le x\}$$

$$Pr(X \le x) = \int_{-\infty}^{x} P(\tilde{x})\, d\tilde{x}$$

PDF $P(x)$ = rate of change of cumulative probability

b)

$$Pr(0 < X \le 1.5) = \int_0^1 x\, dx + \int_1^{1.5} (-x+2)\, dx$$

$$= \left[\frac{1}{2}x^2\right]_0^1 + \left[-\frac{1}{2}x^2 + 2x\right]_1^{1.5} = \frac{1}{2} + \frac{3}{8} = \frac{7}{8}$$