Example

- Roll one die, let X be value
- $\mathbb{E}[X] = 7/2$ (from last lecture)
- $V(X) = \mathbb{E}[(X - 7/2)^2]$.
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k	$(k-7/2)^2$
1	25/4
2	9/4
3	1/4
4	1/4
5	9/4
6	25/4

- So

$$V(X) = \frac{25}{4}\cdot\frac{1}{6} + \frac{9}{4}\cdot\frac{1}{6} + \frac{1}{4}\cdot\frac{1}{6} + \frac{1}{4}\cdot\frac{1}{6} + \frac{9}{4}\cdot\frac{1}{6} + \frac{25}{4}\cdot\frac{1}{6}$$
$$= \frac{25+9+1+1+9+25}{24} = \frac{70}{24} = \frac{35}{12}.$$