Solution for exercise 3.3.1 in Pitman

	# of days	28	30	31
Question a)	frequency	1	4	7

$$E(X) = 28 \cdot \frac{1}{12} + 30 \cdot \frac{4}{12} + 31 \cdot \frac{7}{12} = \frac{365}{12} = (30.42)$$

$$E(X^2) = 28^2 \cdot \frac{1}{12} + 30^2 \cdot \frac{4}{12} + 31^2 \cdot \frac{7}{12}$$

$$SD(X) = \sqrt{E(X^2) - E(X)^2} = 0.86$$

	# of days	28	30	31
Question b)	frequency	$\frac{28}{365}$	$\frac{120}{365}$	$\frac{217}{365}$

$$E(X) = 28 \cdot \frac{28}{365} + 30 \cdot \frac{120}{365} + 31 \cdot \frac{217}{365} = \frac{11111}{365}$$

$$E(X^2) = 28^2 \cdot \frac{28}{365} + 30^2 \cdot \frac{120}{365} + 31^2 \cdot \frac{217}{365} = \frac{338489}{365}$$

$$SD(X) = \sqrt{E(X^2) - E(X)^2} = 0.841$$