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## Lesson 1.2.3

can describe what happens to probability when the sample space changes.

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### [-75] Theoretical probability

$$P(\text{red}) = \frac{2}{12}$$

$$P(\text{purple}) = \frac{5}{12}$$

$$P(\text{yellow}) = \frac{1}{12}$$

$$P(\text{orange}) = \frac{0}{12} \text{ impossible}$$

### sample space

all possible outcomes (denominator)

EX: 12 total blocks

### [-77]

a) more blocks means more chances

if we add equal amounts, the probability shouldn't change

b) total # = 24 <sup>← sample space</sup> purple: 10

green: 8

red: 4

yellow: 2

$$c) \quad P(\text{red}) : \frac{4}{24} = \frac{2}{12} \quad \frac{1}{6}$$

$$P(\text{purple}) : \frac{10}{24} = \frac{5}{12}$$

$$P(\text{green}) : \frac{8}{24} = \frac{4}{12} \quad \frac{1}{3}$$

$$P(\text{yellow}) : \frac{2}{24} = \frac{1}{12}$$

d) Doubling the blocks and our sample space doesn't change the probability.

$$e) \quad p(\text{red}) : \frac{4}{14}$$

$$p(\text{purple}) : \frac{5}{14}$$

$$p(\text{green}) : \frac{4}{14}$$

$$p(\text{yellow}) : \frac{1}{14}$$

When you only change part of your sample space (one color), the probability of all outcomes change.

complete #1-80 (p.41)