Warm up:

You roll a 20-sided die. Find the following probabilities

1) P(20) $\frac{1}{20}$

2) P(not even) $\frac{10}{20} = \frac{1}{2}$

3) P(greater than 12) $\frac{8}{20} = \frac{2}{5}$

4) P(4, 10, or 16) $\frac{3}{20}$

If you spin the spinner to the right twice, what the P(red, then green)?

$\frac{1}{4} \cdot \frac{1}{4} = \frac{1}{16}$

PP	GP	OP	RP
PG	GG	OG	RG
PO	GO	OO	RO
PR	GR	OR	RR

$\frac{4}{} \cdot \frac{4}{} = 16$

compound event: an event that consists of two or more simple events

For independent events...

$$P(A, \text{then } B) = P(A) \cdot P(B)$$

Ex: Rolling a die twice.
P(3, then 4)

$$\frac{1}{6} \cdot \frac{1}{6} = \frac{1}{36}$$

HW Solutions

(9) $\frac{6}{70} = \frac{3}{35}$

(10) $\frac{28}{50} = \frac{14}{25}$

(10) $\frac{21}{70} = \frac{x}{540}$

$\frac{70x}{70} = \frac{11340}{70}$

$x = 162$

② $\frac{18}{20} = \frac{9}{10}$

(5)

$$\frac{11}{50} = \frac{x}{100}$$

$$\frac{50x}{50} = \frac{1100}{50}$$

$$x = 22$$

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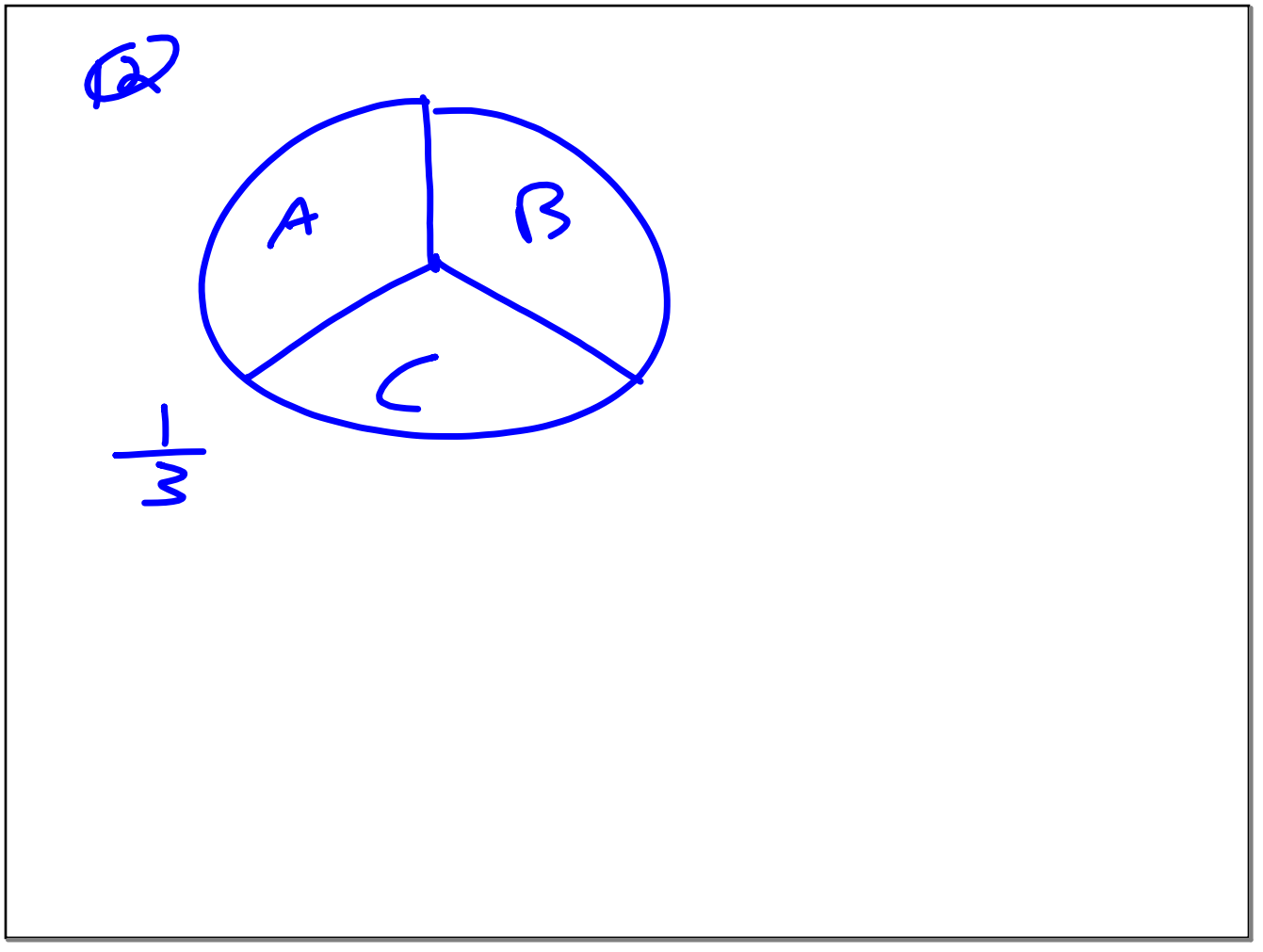


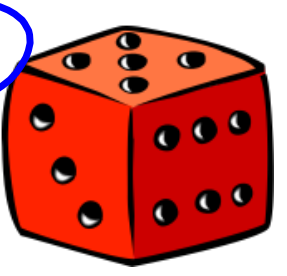
B $\frac{24}{100} = \frac{6}{25}$

A

C $\frac{26}{100} = \frac{13}{50}$

Rolling a die and picking a card...

1) P(3 and spade) = $\frac{1}{6} \cdot \frac{13}{52} = \frac{1}{4} = \frac{1}{24}$



2) P(odd and 10) =

3) P(1 or 4 and face card) =

4) P(greater than 2 and red) =

5) P(not 5 and not diamonds) =

6) P(2 and 6 of hearts) =

Picking a card, replacing it, and picking again...

7) P(Ace then King) =

8) P(Ace of spades twice) =

9) P(Diamond then red) =

10) P(two face cards) =

1) P(3 and spade) =

2) P(odd and 10) =

$\frac{1}{2} \cdot \frac{4}{52} = \frac{1}{13}$

3) P(1 or 4 and face card) =

$$\frac{\cancel{2}^{1}}{\cancel{6}_{3}} \cdot \frac{\cancel{12}}{\cancel{52}} \frac{\cancel{3}}{13} = \frac{1}{13}$$

4) P(greater than 2 and red) =

$$\frac{\cancel{2}\ 4}{3\ \cancel{6}} \cdot \frac{\cancel{26}\ ^{1}}{\cancel{52}\ _{2}} = \frac{1}{3}$$

5) P(not 5 and not diamonds) =

$$\frac{5}{6} \cdot \frac{39}{52} = \frac{5}{8}$$

6) P(2 and 6 of hearts) =

$$\frac{1}{6} \cdot \frac{1}{52} = \frac{1}{312}$$

7) P(Ace then King) =

$$\frac{1}{13}\cdot\frac{4}{52}\cdot\frac{4}{52}\cdot\frac{1}{13}=\frac{1}{169}$$

8) P(Ace of spades twice) =

$$\frac{1}{52} \cdot \frac{1}{52} = \frac{1}{2704}$$

9) P(Diamond then red) =

$$\frac{1}{4}\frac{13}{52} \cdot \frac{26}{52}\frac{1}{2} = \frac{1}{8}$$

10) P(two face cards) =

$$\frac{3}{13}\cdot\frac{3}{13}=\frac{9}{169}$$

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