

Unit 6 Probability

Day 11

Test Review Day!

Warm-up — Review Day!

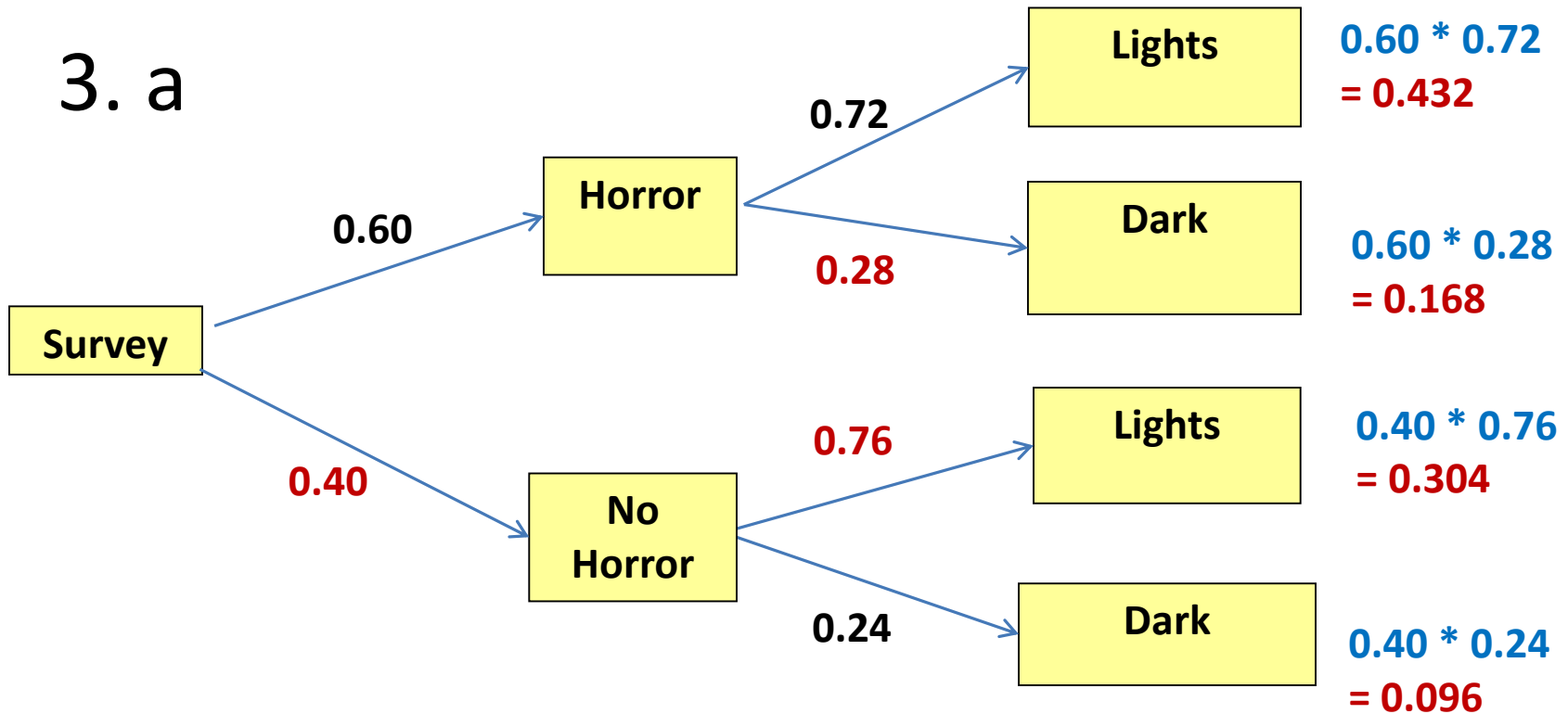
1. There are 3 quarters, 7 dimes, 13 nickels, and 27 pennies in Jonah's piggy bank. If Jonah chooses 2 of the coins at random,
 - a) what is the probability that the first coin chosen is a penny and the second coin chosen is a dime? The first coin is not replaced.
 - b) what is the probability that he chooses a quarter and a dime?
2. Given a standard deck of cards, find $P(\text{Ace of Spades} \mid \text{black card})$.
3. Suppose 60% of all teenagers like to watch horror movies. 28% of teenagers that watch horror movie, watch movies in the dark. 76% of teenagers that do not watch horror films, watch movies with the lights on.
 - a) Create a tree diagram.
 - b) What is the probability that a teenager watches movies with the lights on?
 - c) Find $P(\text{Dark} \mid \text{Watches Horror Movies})$
 - d) If the teenagers watch movies in the dark, what is the probability that they do not watch horror films?

Warm-up — Answers!

- There are 3 quarters, 7 dimes, 13 nickels, and 27 pennies in Jonah's piggy bank. If Jonah chooses 2 of the coins at random,
 - what is the probability that the first coin chosen is a penny and the second coin chosen is a dime? The first coin is not replaced.
$$\frac{27}{350}$$
 - what is the probability that he chooses a quarter and a dime?
$$\frac{3}{175}$$
$$\left(\frac{3}{50}\right)\left(\frac{7}{49}\right) + \left(\frac{7}{50}\right)\left(\frac{3}{49}\right)$$
- Given a standard deck of cards, find $P(\text{Ace of Spades} \mid \text{black card})$.
$$\frac{1}{26}$$

Warm-up — Answers!

3. a



b) What is the probability that a teenager watches movies with the lights on? **73.6 %**

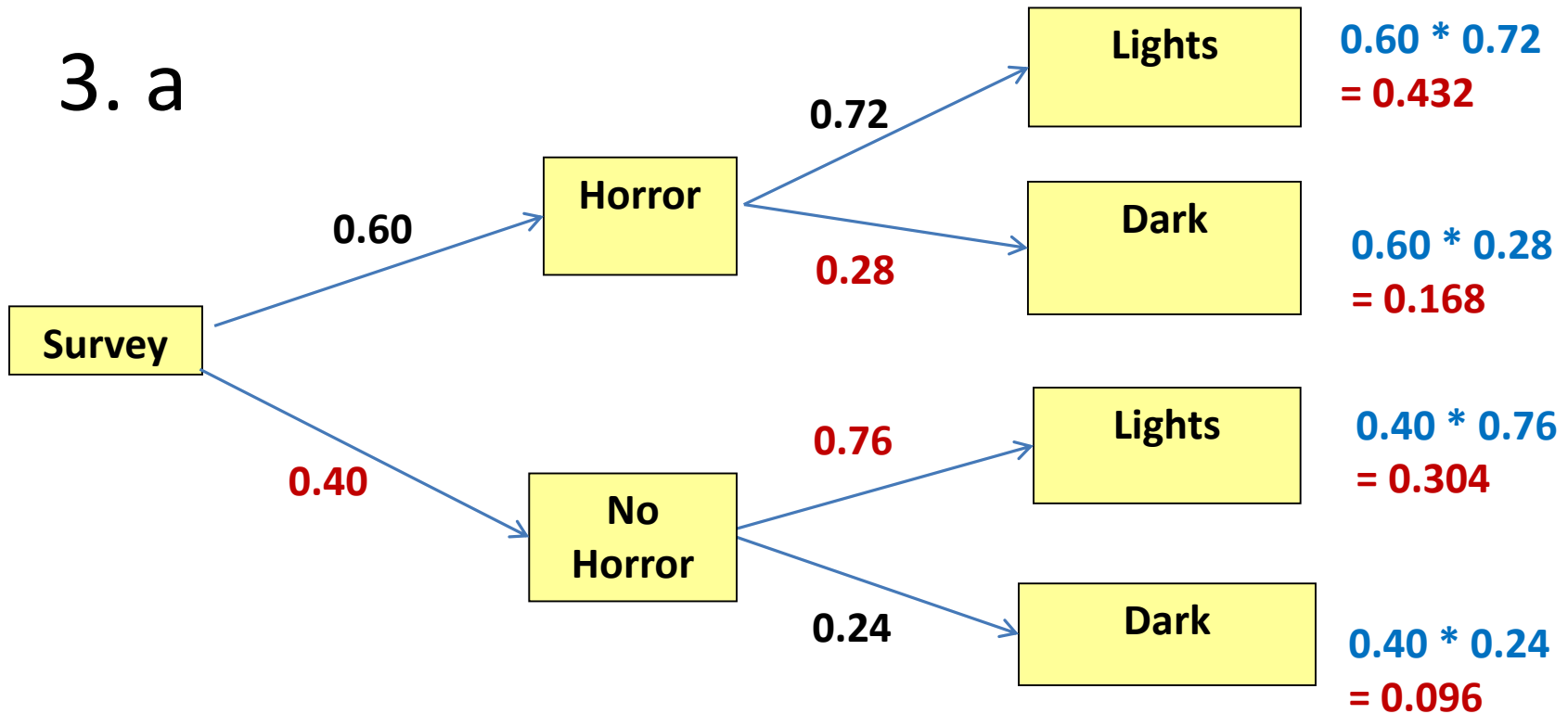
c) Find $P(\text{Dark} \mid \text{Watches Horror Movies})$ **28%**

d) If the teenagers watch movies in the dark, what is the probability that they do not watch horror films? **36.4%**

***this is a "given" problem in disguise...and you must use the given formula**

Warm-up — Answers!

3. a



b) What is the probability that a teenager watches movies with the lights on? **73.6 %**

c) Find $P(\text{Dark} \mid \text{Watches Horror Movies})$ **28%**

d) If the teenagers watch movies in the dark, what is the probability that they do not watch horror films? **36.4%**

***this is a “given” problem in disguise...and you must use the given formula**

HW Answers

p. 12 # 1

a.

Die	1	2	3	4	5	6
1	1	2	3	4	5	6
2	2	4	6	8	10	12
3	3	6	9	12	15	18
4	4	8	12	16	20	24
5	5	10	15	20	25	30
6	6	12	18	24	30	36

b. $P(A) = 1/4$

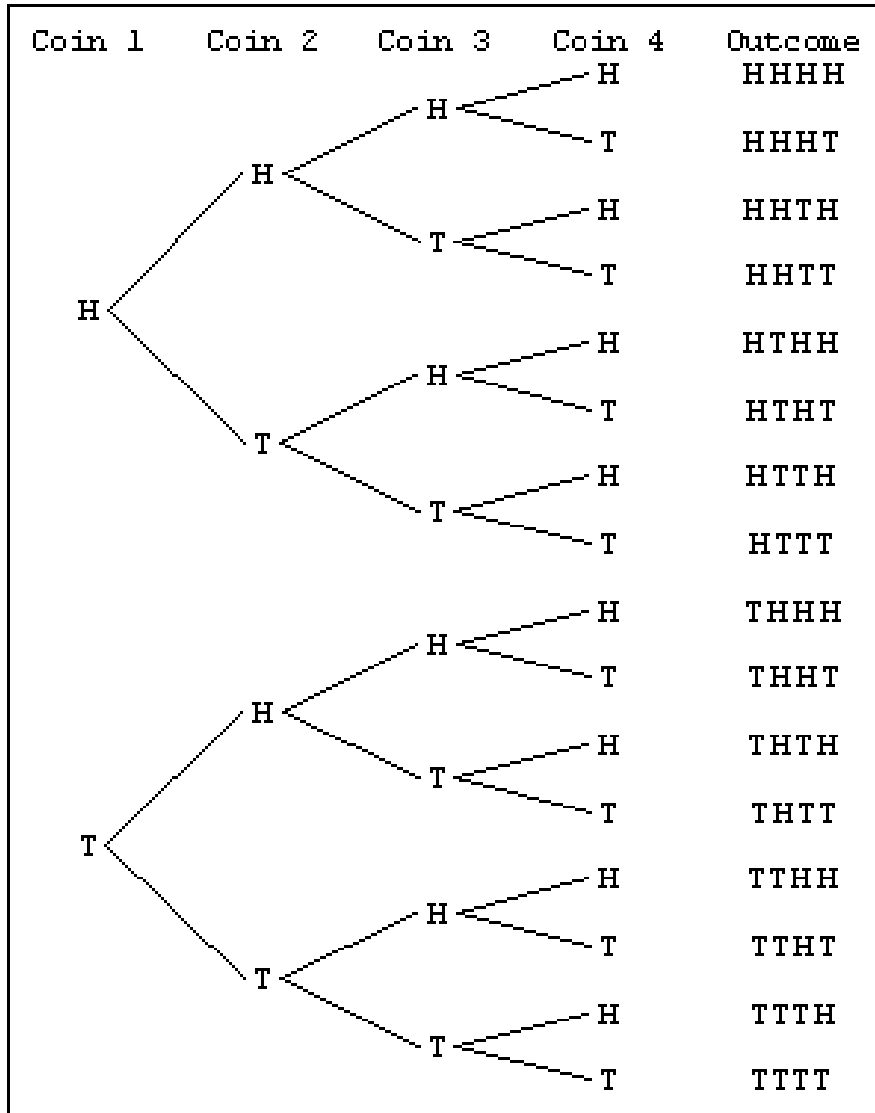
c. $P(B) = 3/4$

d. The game is not fair because the probability of each person winning is not equal.

HW Answers

p. 12 # 2

a.



Pt to

B
B
B
A
B
A
A
B
B
A
B
A
B
B
B

b. $P(A) = 3/8$

c. $P(B) = 5/4$

d. The game is not fair because the probability of each person winning is not equal.

HW Answers

p. 18 – 19
odds

1. B

3. A

5. A

7. C

9. A

11. B

13. D

15. A

p. 20 – 21 odds

13. On next slide

15.

b.

	1	1	1	1	1	5
1	1	1	1	1	1	5
1	1	1	1	1	1	5
1	1	1	1	1	1	5
1	1	1	1	1	1	5
1	1	1	1	1	1	5
3	3	3	3	3	3	15

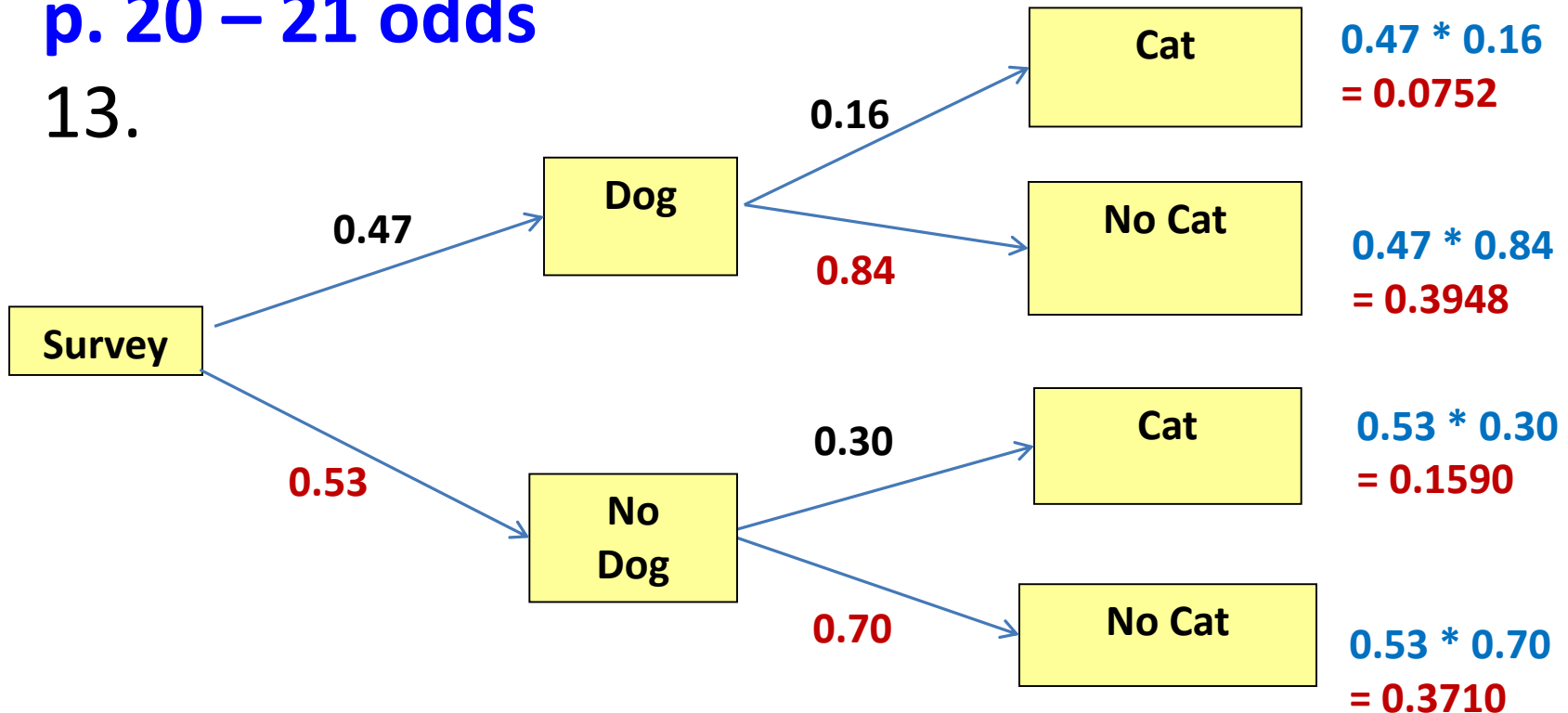
c. $P(A) = 13/18$ d. $P(B) = 5/18$

e. The game is not fair because the probability of each person winning is not equal.

HW Answers

p. 20 – 21 odds

13.



b) What is the probability that a student has a dog and a cat? **7.52%**

c) What is probability that a student has either no dog or no cat?

$$(.47)(.84) + (.53)(.30) + (.53)(.70) \text{ OR } 1 - (.47)(.16) = 92.48\%$$

d) If student has a cat, find the probability they have a dog. **32.11%**

***this is a "given" problem in disguise...and you must use the given formula**

e) Find $P(\text{no cat} \mid \text{no dog})$ **70%** (can use formula or find the branch)

Homework

p. 18-19 Evens

p. 20-21 Evens

Remember to Show your work!

Study for the TEST!

Around the Room Probability Review

On a sheet of paper, please create 3 columns:

Problem	Work	Solution and Shape