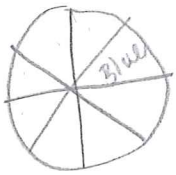
Name _____ # _____

1) A spinner is divided into eight equal sections. Each section is a different color. Is spinning and landing on blue a likely event, unlikely event, or neither?

Unlikely event



2) What is the probability of getting tails three times in a row when you flip a coin?

$\frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} = \frac{1}{8}$

HHT
HTH
HHH
HTT
TTT ←
THT
TTH
THH

3) How many outcomes are possible if you roll a number cube and flip a coin?

$6 \cdot 2 = 12$

4) To the nearest percent, what is the probability of rolling a number less than 5 on a number cube?

$\frac{4}{6} = 67\%$

1) Show work 2) Circle Ans. 3) Answer Sheet

5) A spinner has five equal sections that are red, green, blue, orange, and yellow. If a number cube is rolled and the spinner is spun, find P(3, G).

$\frac{1}{6} \cdot \frac{1}{5} = \frac{1}{30}$

cube ↑ yellow ↑

6) How many outcomes are possible if you roll a number cube and spin a spinner that has eight equal sections with different colors?

$6 \cdot 8 = 48$

die ~ 6 outcomes
spinner ~ 8 sections.

7) What is the probability of randomly selecting a green marble from a bag that contains 4 red marbles, 7 blue marbles, and 5 yellow marbles?

$\frac{0}{16}$

8) Based on the theoretical probability, how many times should you expect to get a 2 when you roll a number cube 186 times?

$P(2) = \frac{1}{6} \cdot 186 = \frac{186}{6} = 31$

$\frac{31}{186}$

$6\overline{)186}$ → 31, 18↓, 06

9) A coin is flipped and a number cube is rolled. Use an organized list to find the probability of getting tails and a number less than 7?

$\frac{1}{2}$ Less than 7 = 100% chance

H or T = 50%

6 numbers < than 7 = 100%

$\frac{1}{2} \cdot 1 = \frac{1}{2}$

10) One of two supplementary angles is 53°. Let x = the measure of the other supplementary angle. Write and solve an equation to find the measure of angle x.

$180° - 53° = x$

$x = 127°$

x / 53°

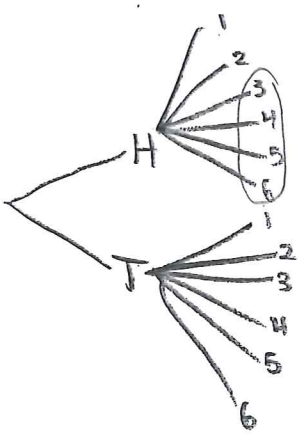
11) A coin is flipped and a number cube is rolled. What is the probability of getting tails and a number greater than 5?

$\frac{1}{2} \cdot \frac{1}{6} = \frac{1}{12}$

12) Is rolling a number less than 6 on a number cube a likely event, unlikely event, or neither?

Likely event

13) A coin is flipped and a number cube is rolled. Use a tree diagram to find the probability of getting heads and a number greater than 2?



$\frac{1}{2} \cdot \frac{4}{6} = \frac{4}{12} = \frac{1}{3}$

$\frac{4}{12} = \frac{1}{3}$

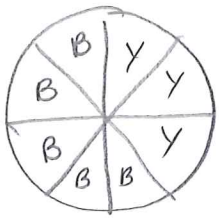
14) The letters for the words "super awesome" are placed in a bag. If a letter is chosen at random, what is the probability of selecting the letter "k"? $P(K) =$ ____

$\frac{0}{12}$

15) A spinner has 8 equal sections. Three sections are yellow and five sections are blue. What is the probability of spinning and landing on red?

$\frac{0}{8}$

$P(R) = \frac{0}{8}$



16) A bag contains 7 purple marbles and 1 red marble. Is randomly selecting a purple marble a likely event, unlikely event, or neither?

Likely event

17) Is randomly selecting a consonant from the word "August" a likely event, unlikely event, or neither?

Vowels = $\frac{3}{6}$

Consonants = $\frac{3}{6}$

Neither (50% chance)

18) What is the probability of rolling an 8 on a regular number cube?

$\frac{0}{6}$

19) A spinner has four equal sections that are red, green, blue, and yellow. If a number cube is rolled and the spinner is spun, find P(5, B).

$\frac{1}{6} \cdot \frac{1}{4} = \frac{1}{24}$

Prob(5) Prob(B)

	1	2	3	4	5	6
R	R1	R2	R3	R4	R5	R6
G	G1	G2	G3	G4	G5	G6
(1/4) B	B1	B2	B3	B4	B5	B6
Y	Y1	Y2	Y3	Y4	Y5	Y6

(1/6)

20) Based on the theoretical probability, how many times should you expect to get a 5 or 6 when you roll a number cube 423 times?

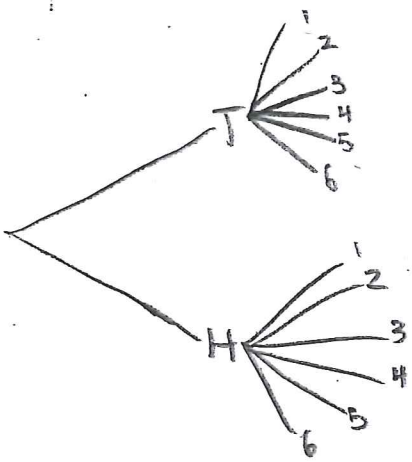
$\frac{423}{6} = 70.5 \cdot 2 = \frac{141}{423}$

$\frac{2}{6} \cdot 423 = \frac{846}{6} = 141$

$\frac{141}{423}$

423 | 2
141 | 3
846 | 6
6
24
24
06

21 Use a tree diagram to find the sample space if a number cube is rolled and a coin is flipped. How many possible outcomes are there?



12

Cube: 6 outcomes
Coin: 2 outcomes

22 Two number cubes are rolled. Find the probability of rolling a sum that is greater than 1.

Can always have a sum greater than 1, 100%.

23 What is the probability of randomly selecting a vowel from the word "ultimate"?

$\frac{4}{8} = \frac{1}{2}$

24 To the nearest percent, what is the probability of rolling a number greater than 2 on a number cube?

3,4,5,6 $\frac{4}{6} = \frac{2}{3}$ 67% OR 66.7%

25 Two number cubes are rolled. Is rolling double sixes a likely event, unlikely event, or neither? 6, 6

unlikely event

26 To the nearest percent, what is the probability of rolling a number greater than 5 on a number cube?

$\frac{1}{6} = 17\%$

27 Is randomly selecting the ace of spades from a deck of cards a likely event, unlikely event, or neither?

$\frac{1}{52}$ unlikely event

28 Two number cubes are rolled. Find the probability of rolling a sum that is less than 14.

100%

all sums are less than 14 (Largest sum is 12).

+	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12

29 To the nearest percent, what is the probability of rolling a number less than 6 on a number cube?

$P(\#<6)$ $\frac{5}{6}$ $= 83\%$

30 What is the probability of randomly selecting the letter "c" from the word "uncommon"?

$\frac{1}{8}$

31 A single number cube is rolled. Find the probability of rolling a number that is less than 8.

$P(\#<8)$

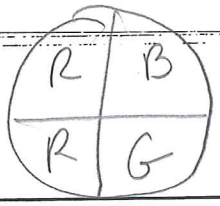
100%

32 How many outcomes are possible if you flip a coin and then select a card from a standard deck with 52 cards?

$2 \cdot 52 = 104$ outcomes

$P(H, T) = 2$

Deck $= 52$



33 A spinner has four equal sections. Two are red, one is blue, and one is green. Based on the theoretical probability, how many times should you expect to get green when you spin the spinner 284 times?

$\frac{1}{4} \cdot 284 = 71 = \frac{71}{284}$

34 There are 38 students in Mr. Reynolds math class and 20 are boys. If a student is selected at random what is the probability that a girl is selected? Give the answer as a fraction in simplest form.

38 total
−20 boys
18 girls

$\frac{\text{girls}}{\text{total}} \frac{18}{38} = \frac{9}{19}$

$P(\text{Girl}) = \frac{9}{19}$

35 Is rolling a number greater than 1 on a number cube a likely event, unlikely event, or neither?

Likely event

36 To the nearest percent, what is the probability of rolling a 2 or a 4 on a number cube?

$P(2) = \frac{1}{6}$
$P(4) = \frac{1}{6}$

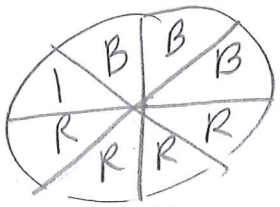
$\frac{1}{6} + \frac{1}{6} = \frac{2}{6} = \frac{1}{3}$

OR

33%

37 A spinner has 8 equal sections. Three sections are blue, 4 are red, and 1 is green. What is the probability of spinning and landing on blue? Give the answer as a fraction is simplest form.

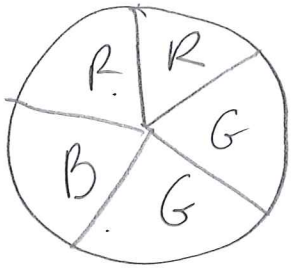
$\frac{3}{8}$



$P(B) = \frac{3}{8}$

38 A spinner has five equal sections. Two are red, two are green, and one is blue. If a number cube is rolled and the spinner is spun, find the probability of rolling an even number and spinning green.

$\frac{3}{6} = \frac{1}{2} \cdot \frac{2}{5} = \frac{2}{10} = \frac{1}{5}$



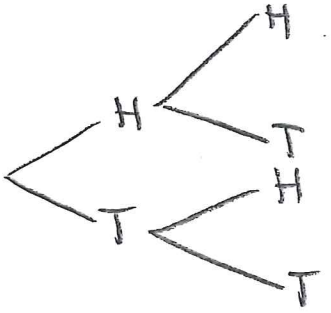
$P(\text{even}) = \frac{3}{6}$

$P(\text{green}) = \frac{1}{5}$

39 Is randomly selecting the letter "e" from the word "fascinate" a likely event, unlikely event, or neither?

unlikely event

40 A coin is flipped two times. Use a tree diagram to find the probability of getting tails twice in a row.



$\frac{1}{4}$

41 A spinner is divided into eight equal sections. Four sections are yellow, 2 are blue, 1 is green, and 1 is red. Is spinning and landing on yellow a likely event, unlikely event, or neither?

Neither

42 A bag contains 3 red marbles, 4 blue marbles and 9 green marbles. Find the probability of randomly selecting a marble from the bag that is not orange.

$P(\text{not orange}) = \frac{16}{16}$

$\frac{16}{16}$ 100%

$P(\text{orange}) = \frac{0}{16}$

no orange!

43 To the nearest percent, what is the probability of rolling a number greater than 3 on a number cube?

$\frac{3}{6} = \frac{1}{2} = 50\%$

4, 5, 6 $\frac{3}{6} = \frac{1}{2}$

44 A coin is flipped and a number cube is rolled. What is the probability of getting heads and a number greater than 1?

$P(H) = \frac{1}{2}$

$P(\#>1) = \frac{5}{6}$

$\frac{1}{2} \cdot \frac{5}{6} = \frac{5}{12}$

45 In a survey 80 out of 100 people supported building a new library. If 450 people were asked if they supported building the library, how many would you expect to say yes?

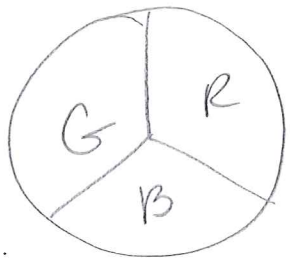
$\frac{80}{100} = \frac{x}{450}$

$\frac{36000}{100} = \frac{100x}{100}$

$360 = x$

46 A spinner has three equal sections colored red, blue, and green. Based on the theoretical probability, how many times should you expect to get red or green when you spin the spinner 351 times?

$\frac{1}{3} + \frac{1}{3} = \frac{2}{3} \cdot \frac{351}{1} = 234$ times



$P(R) = \frac{1}{3}$

$P(G) = \frac{1}{3}$

$\frac{1}{3} + \frac{1}{3} = \frac{2}{3} \cdot \frac{351}{1} = \frac{702}{3} =$

234

47 Is getting tails when you flip a coin a likely event, unlikely event, or neither?

Neither, 50% chance

48 Two number cubes are rolled. Is rolling a sum less than ten a likely event, unlikely event, or neither?

$P(\# < 10) =$

Likely event

+	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12

49 There are 12 girls and 8 boys in a volleyball class. If a person is selected at random, what is the probability that it will be a boy? Give the answer as a fraction in simplest form.

$P(\text{Boy}) = \frac{8}{20}$

$\frac{8}{20} = \frac{4}{10} = \frac{2}{5}$

50 The letters in the word "ridiculous" are placed in a bag. If a letter is picked at random, what is the probability that a vowel will be selected? Give the answer as a fraction is simplest form.

$P(\text{vowel}) = \frac{5}{10}$

$\frac{5}{10} = \frac{1}{2}$

51 What is the probability of rolling a 7 on a regular number cube?

$\frac{0}{6}$

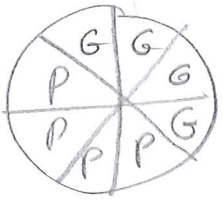
52 Is getting a sum of 2 when you roll two number cubes a likely event, unlikely event, or neither?

unlikely event

53 The letters in the word "magnificent" are placed in a bag. If a letter is picked at random, what is the probability that the letter "i" will be selected? Give the answer as a fraction is simplest form.

$P(I) = \frac{2}{11}$

54 A spinner is divided into eight equal sections. Four sections are green and four are purple. Is spinning and landing on purple a likely event, unlikely event, or neither?



$P(P) = 50\%$

Neither

55 What is the probability of selecting an "a" at random from the word "nonsense"?

0% $\frac{0}{8}$

56 To the nearest percent, what is the probability of rolling a 4 on a number cube?

$\frac{1}{6}$ 17%

$.166 \sim 17\%$

$6\overline{)1.000}$

6

40

-36

40

(OR)

57) Jenny and her best friend Tina are at a beach party with 20 other people. If one person is selected at random to win a raffle prize, what is the probability that it will be Jenny or Tina? Give the answer as a fraction in simplest form.

$\frac{1}{22} + \frac{1}{22} = \frac{2}{22} = \frac{1}{11}$

$P(J \text{ or } T) = \frac{1}{22} + \frac{1}{22} = \frac{2}{22} = \frac{1}{11}$

$\frac{1}{22}$ $\frac{1}{22}$

58) There are two 5th grade classes at Jones Elementary School. Mrs. Roberts has 17 girls and 18 boys in her class. Mr. Simpson has 16 boys and 19 girls in his class. If a 5th grade student is selected at random, what is the probability that it will be a girl? Give the answer as a fraction in simplest form.

19 + 17 = 36 girls

18 + 16 = 34 boys

36 + 34 = 70

$\frac{36}{70} = \frac{18}{35}$

17 + 18 = 35

19 + 16 = 35

Roberts – 17 g 18 b = 35 > 70

Simpson – 19 g 16 b = 35

36 g 34 b

$P(g) = \frac{36}{70} = \frac{18}{35}$

59 There are 32 adults at a family reunion. Eighteen of them are women. There are 26 kids at the reunion. Fourteen of them are boys. If a person at the reunion is chosen at random, what is the probability that it will be an adult male? Give the answer as a fraction in simplest form.

60 Janice bought 4 shirts that are red, green, white, and yellow and 3 pairs of pants that are black, light blue, and dark blue. Use an organized list to determine the probability that Janice wears a white shirt and blue pants if she randomly chooses her outfit from her new clothes.

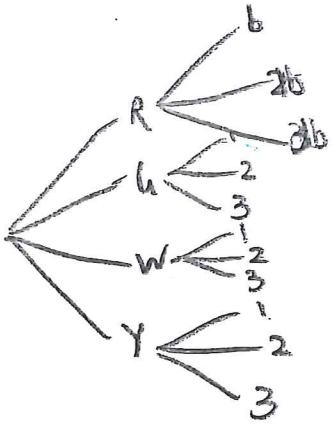
W m b g
18 14 14 12

$\begin{array}{r} 32 \\ -18 \\ \hline 14 \end{array}$

$\begin{array}{r} 26 \\ -14 \\ \hline 12 \end{array}$

$\frac{14}{58} = \frac{7}{29}$

$\begin{array}{r} 32 \\ +26 \\ \hline 58 \end{array}$



$\frac{1}{12}$

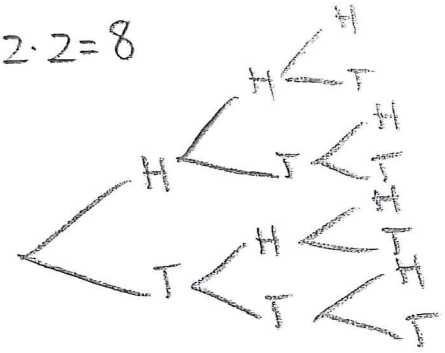
$\frac{2}{12} = \frac{1}{6}$

61 How many outcomes are possible if you roll a number cube and then select a card from a standard deck with 52 cards?

$$\begin{array}{r} {}^{1}52 \\ \times\ 6 \\ \hline 312 \end{array}$$ (312)

62 Use a tree diagram to find the sample space if a coin is flipped three times. How many possible outcomes are there?

$2 \cdot 2 \cdot 2 = 8$



63 What is the probability of rolling a prime number on a number cube?

$\frac{3}{6} = \frac{1}{2}$

64 Is randomly selecting a vowel from the word "heater" a likely event, unlikely event, or neither?

Neither

65 A bag contains 5 red marbles and 7 green marbles. Find the probability of randomly selecting a marble from the bag that is not purple.

$\frac{12}{12}$, 100%

66 What is the probability of randomly selecting a purple marble from a bag that contains 8 red marbles, 9 blue marbles, and 5 yellow marbles?

0% $\frac{0}{22}$

67 A coin is flipped and a number cube is rolled. What is the probability of getting tails and a number greater than 5?

$\frac{1}{2} \cdot \frac{1}{6} = \left(\frac{1}{12}\right)$

68 Is randomly selecting a queen from a deck of cards a likely event, unlikely event, or neither?

$\frac{4}{52}$, unlikely event