Name _____

Chapter 9 Practice Test

Tiffany has a bag of 250 marbles. There are 20 red marbles, 50 yellow marbles, 80 blue marbles, 70 green marbles, and 30 orange marbles. She tells Sidney to draw a marble from the bag.

1) *P*(red)　　　　　　　　　　　2) *P*(orange)

3) *P*(brown)　　　　　　　　　　4) *P*(marble)

5) *P*(blue)　　　　　　　　　　　6) *P*(yellow)

7) *P*(green)

In order to determine whether or not a die is fair, Vanessa rolls the die 500 times and records the results in the table shown. Find the experimental probabilities requested.

Outcomes	10	9	8	7	6	5	4	3	2	1
Rolls	47	58	36	21	44	67	82	57	33	55

8) *P*(9)　　　　　　　　　　　　9) *P*(7)

10) *P*(even)　　　　　　　　　　11) *P*(prime)

12) *P*(multiple of 3)

Jordyn is making cookies for a bake sale. She wants to make cookies using the following shapes: hearts, stars, trees, and moons. She also wants to put icing on the cupcakes using either chocolate or vanilla icing. She has two types of cookie dough: sugar cookie or lemon cookies.
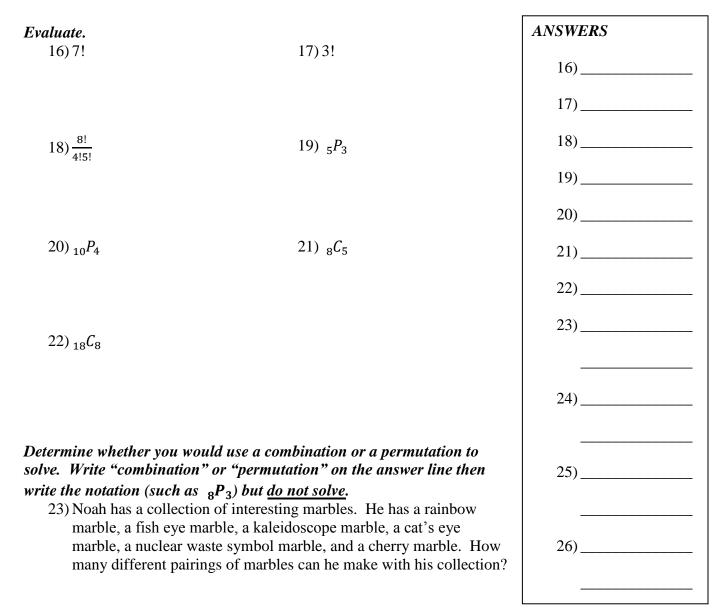
13) How many different types of cookies can Jordyn make?

Answers

1) _____

2) _____

3) _____

4) _____

5) _____

6) _____

7) _____

8) _____

9) _____

10) _____

11) _____

12) _____

13) _____

14) _____

15) _____

14) Jordyn makes one of every type of possible cookie she can, then chooses one at random to share with her friend, Jessie. What's the probability Jessie gets a sugar cookie with chocolate icing in the shape of a heart?

15) Jordyn makes three of every type of possible cookie she can, then chooses one cookie randomly to share with her friend, Shalini. What is the probability that Shalini gets a cookie with vanilla icing in the shape of a moon?

Evaluate.

16) 7!

17) 3!

18) $\dfrac{8!}{4!5!}$

19) $_5P_3$

20) $_{10}P_4$

21) $_8C_5$

22) $_{18}C_8$

Determine whether you would use a combination or a permutation to solve. Write "combination" or "permutation" on the answer line then write the notation (such as $_8P_3$) but <u>do not solve</u>.

23) Noah has a collection of interesting marbles. He has a rainbow marble, a fish eye marble, a kaleidoscope marble, a cat's eye marble, a nuclear waste symbol marble, and a cherry marble. How many different pairings of marbles can he make with his collection?
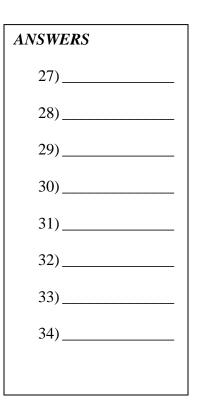
24) Jack wants to organize 500 students into groups of 5. How many ways are there for him to do so?

25) Markham is judging contestants in a pie-baking contest. There are 300 contestants and Markham gets to award a 1st, 2nd, 3rd, and 4th place winner. How many ways are there for him to do so?

26) Madi is making a pizza. She has 40 toppings to choose from, but only wants to choose 3. How many different pizzas could she make?

Determine if the events are independent or dependent.
Then find P(A then B).

27) Tavian has a bucket of 500 marbles. There are 50 red, 200 green, 175 yellow, 35 blue, and 90 purple. He draws 2 marbles without replacing the first.
Event A: He draws a red marble.   Event B: He draws a red marble.

28) Hannah has a standard deck of 52 cards. She draws a card, replaces it, then draws another card.
Event A: She draws a Queen. Event B: She draws a black number.

29) David draws two names without replacement from a hat containing 40 girls' names and 50 boys' names.
Event A: He draws a boy's name.   Event B: He draws a girl's name.

Solve the problem.

30) Sedona has a $5/9$ chance of winning a game she is playing. What are the odds against her winning?

31) Drew has a bag of 50 marbles and 20 of them are red. What are the odds in favor of him drawing a red marble at random?

32) Mika is drawing a card at random from a standard deck of 52 cards. What are the odds against her drawing an Ace or a 2?

33) There are 3:1 odds in favor of Sophia winning the next game she plays. What is her probability of winning (as a fraction)?

34) Parker has a $7/15$ chance of losing the game he is playing. What are the odds in favor of him winning the game?