

College Math
Final Exam Prep

Name _____ Period _____ Score _____

1. What is the sample space when you roll 2 dice?
2. What is the probability of rolling a 7 on at least one of the di?
3. What is the probability of rolling a 1 or a 7 on at least one of the di?
4. What is the probability of rolling a sum equal to 7?
5. What is the probability of rolling a sum less than 7?
6. What is the probability of rolling a sum greater than 7?
7. A class consists of 7 females and 9 males, how many possible 5 person committees can be formed?
8. A class consists of 5 females and 2 males, how many possible 5 person committees can be formed?
9. A class consists of 7 females and 9 males, how many possible 5 person committees can be formed if all 5 must be male?
10. A class consists of 7 females and 9 males, how many possible 5 person committees can be formed if all 5 must be female?
11. A class consists of 7 females and 9 males, what is the probability that a 5 person committee will consist of all male members?
12. A class consists of 7 females and 9 males, what is the probability that a 5 person committee will consist of all female members?
13. How many possible ID's can be created using 3 letters followed by 5 digits(digits and letters may repeat)?
14. How many possible ID's can be created using 3 digits followed by 5 letters(digits and letters may repeat, ID doesn't start with 0)?

15.

Accident Statistics	Wore seat belt	No seat belt
Driver Survived	433,318	126,437
Drive Died	645	1547

- a) What is the probability of a person dying while wearing a seatbelt?
 - b) What is the probability of a person surviving while wearing a seatbelt?
 - c) What is the probability of a person dying while not wearing a seatbelt?
 - d) What is the probability of a person surviving while not wearing a seatbelt?
16. Write each statement in an equivalent way?
- a) All dogs wag their tail.
 - b) Some teachers wear ties.
 - c) At least one student will graduate.
 - d) Every car has seatbelts.
17. Write the negation of each statement.
- e) a) All dogs wag their tail.
 - f) Some teachers wear ties.
 - g) At least one student will graduate.
 - h) Every car has seatbelts.

Complete a Truth Table for each.

- 18.
- 19.
- 20.
- 21.

Complete each compound statement using p, q, and r.

p: I pick up the kids. q: I pick up pizza. r: I drive the car.

- 22.
- 23.
- 24.
- 25.

Classify each set notation(what does it mean in terms of numbers?)

- 26.
- 27.
- 28.
- 29.
- 30.

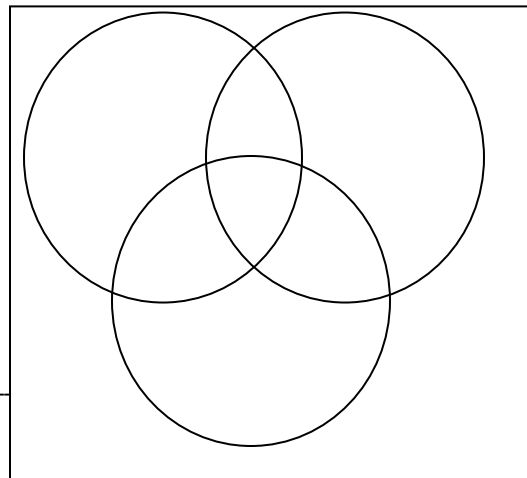
Express each set of numbers in set builder notation

- 31. {...3, 4, 5, 6}
- 32. {-5, ..., 10, 11, 12}
- 33. {-5, ..., 10, 11, 12,...}

34. Create a Venn Diagram for the 100 people that were surveyed about their favorite TV shows.

- 49 like Duck Dynasty
- 45 like Man v. Food
- 59 like Pawn Stars
- 31 like Duck Dynasty and Man v. Food
- 22 like Duck Dynasty and Pawn Stars
- 21 like Man v. Food and Pawn Stars
- 10 like all 3 TV shows

- A) How many people only like Duck Dynasty? _____
- B) How many people only like Pawn Stars? _____
- C) How many people don't like any of the 3 shows? _____
- D) How many people like only 2 shows? _____
- E) How many people were surveyed? _____



Use the Shoe size data of a class of 16 to complete the questions below.

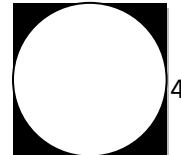
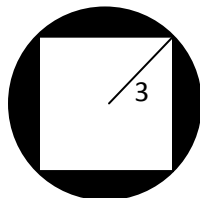
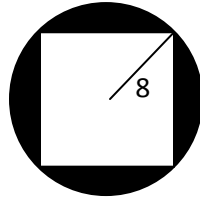
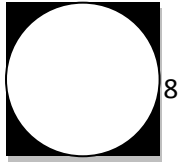
12, 10.5, 9, 8.5, 10, 10, 10.5, 11, 11.5, 7.5, 8, 9, 5, 10.5, 10.5, 10.5

- 35. Create a frequency table that includes the relative frequency.
- 36. Find the mean, median, mode and standard deviation.
- 37. What percentage of the students in your class wore a size 10?
- 38. In a school of 350 students, estimate how many students where a size 9.
- 39. If another class had an average shoe size of 11.4, use your mean and standard deviation to find their z-score.
What does the other class' z-score mean?

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40. Find each shaded area



41. Draw a conclusion about how you could find the area of any square/circle shaded area problem?
42. A spherical water tank that has a radius of 9 feet is being replaced with a cylindrical tank that also has a radius of 9 feet. How high must the new tank be, to contain the same amount of water as the old tank?
43. A spherical water tank is being replaced with a cylindrical tank that has a height of 20 feet and radius equal to that of the sphere. What must the radius of the new tank be, to contain the same amount of water as the old tank?
44. If you deposit \$1,000 into an account with a 5% interest rate that is compounded monthly, how much money will you have after 6 years?
45. If you deposit \$1,000 into an account that is compounded monthly and after 10 years you have \$7,305.34, what is the interest rate?
- 46.

ANSWERS

1. (1,1) (1,2) (1,3) (1,4) (1,5) (1,6) (2,1) (2,2) (2,3) (2,4) (2,5) (2,6) (3,1) (3,2) (3,3) (3,4) (3,5) (3,6) (4,1) (4,2) (4,3) (4,4) (4,5) (4,6) (5,1) (5,2) (5,3) (5,4) (5,5) (5,6) (6,1) (6,2) (6,3) (6,4) (6,5) (6,6)
2. —
3. —
4. — —
5. — —
6. — —
7. ${}_{16}C_5=4368$
8. ${}_7C_5=21$
9. ${}_9C_5=126$
10. ${}_7C_5=21$
11. — —
12. — —
- 13.
- 14.
15. a) ——— b) ——— c) ——— d) ———
16. a) Every dog wags its tail. b) At least one teacher wears a tie. c) Some students will graduate. d) All cars have seatbelts.
17. a) Not all dogs wag their tails. b) None of the teachers wear a tie. c) None of the students will graduate. d) Not all cars have seatbelts.

18.

p	q		
T	T	T	T
T	F	F	F
F	T	T	T
F	F	T	T

19.

p	q		
T	T	T	T
T	F	F	F
F	T	F	F
F	F	T	F

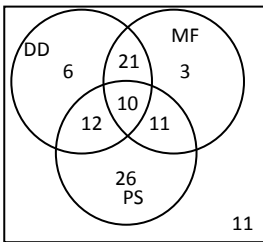
20.

p	q	$\sim q$		
T	T	F	F	F
T	F	T	T	F
F	T	F	T	T
F	F	T	T	F

21.

$\sim p$	$\sim q$		
F	F	T	F
F	T	T	T
T	F	F	T
T	T	T	T

22. If I pick up the kids , then I pick up pizza and I drive the car.
 23. If I pick up the kids and I drive the car, then I pick up pizza.
 24. If I pick up the kids or pizza, then I don't drive the car.
 25. If I don't pick up the kids and I don't pick up pizza, then I don't drive the car.
 26.
 27.
 28.
 29. All Real Numbers, $R, (-\infty, \infty)$
 30. $-2 < x < 4$ or $(-2, 4)$
 31.
 32.
 33.
 34. A) 6 B) 26 C) 11 D) 44 E) 100



35. See me
 36. _____ , median= _____ , mode= 10.5, s=1.75
 37.
 38. About 44 students
 39. $z = 1.01$, such that the other class average is about 1 shoe size greater than your class'.
 40. $64 - 16\pi$ units², $64\pi - 128$ units², $9\pi - 18$ units², $16 - 4\pi$ units²
 41. Circle-Square ratio of 1:2, Square-Circle ratio of 4:1
 42. $h = 4$ ft
 43. $r = 15$ ft
 44. $A = \$1,349.02$
 45. $r = .2005$ 20%