

Study Guide 7th Grade Math Unit 1

1. Which value is equal to **-8** ?

A. $-(-8)$

B. $|8|$

C. $|-8|$

D. $-|-8|$

MGSE.7.NS.1

2. What is the difference of the highest and lowest elevations at the park?

MGSE.7.NS.1

Location	Elevation
Top of the Mountain	310 feet
Bottom of the Valley	-49 feet

3. Evaluate. $-3 - 11 =$

MGSE.7.NS.1

4. Evaluate. $-15 + 6 =$

MGSE.7.NS.1

5. Evaluate. $-5(-8) =$

MGSE.7.NS.2

6. Evaluate. $-35 \div (-7) =$

MGSE.7.NS.2

7. May threw a ball 26 feet in the air and it landed in a ditch that was 9 feet deep. How far did the ball drop from its highest point of 26 feet?

MGSE.7.NS.3

8. A Marine called from Korea to say the temperature had risen 16 degrees since the sun came up. If it was 9°F . when he called, what was the temperature **BEFORE** the sun came up?

MGSE.7.NS.3

9. Which answer is the **smallest**?

MGSE.7.NS.2

A. $-16 \cdot 8 =$

B. $-16 \div 8 =$

C. $-16 + 8 =$

D. $-16 - 8 =$

10. Which answer is the **largest**?

MGSE.7.NS.2

A. $-16 \cdot 8 =$

B. $-16 \div 8 =$

C. $-16 + 8 =$

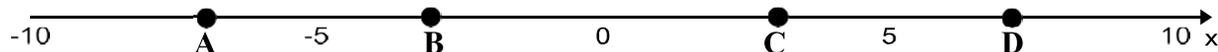
D. $-16 - 8 =$

11. Solve. $-7 + 11 - (-3) =$

MGSE.7.NS.2

12. Which of the following points is found at -3 ?

MGSE.7.NS.1



A. **A**

B. **B**

C. **C**

D. **D**

13. Barb had \$10 in her bank account. She used her debit card to pay \$41 for dinner. What is the new balance of her bank account after the \$41 is deducted? MGSE.7.NS.3

14. What is the difference in the bank accounts of May and Kay?

MGSE.7.NS.3

Account	Money in Bank
May	\$1,473
Kay	-\$44

15. The submarine dives 2 feet per second. What is its depth after 20 seconds? MGSE.NS.3

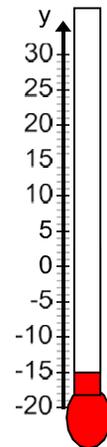
16. Draw a number line with the solution to : $\frac{1}{4} - \frac{1}{2} =$ MGSE.7.NS.1

17. Evaluate: $\begin{matrix} + & - & = \\ - & & \end{matrix}$ MGSE.7.NS.1

18. Evaluate: _____ MGSE.NS.2

19. The numerical expression $-(\quad)$ is equal to: MGSE.7.NS.2

20. The thermometer shows the temperature at the North Pole when Chris woke up this morning. The temperature rose 20 degrees by noon. What was the temperature at noon? MGSE.7.NS.1



21. Choose the two in the box that are equivalent to $-.$ MGSE.7.NS.2

- A. I and II
- B. II and IV
- C. III and IV
- D. I and III

I.	$\frac{\square}{\square}$
II.	$\frac{\square}{-}$
III.	$\frac{-}{\square}$
IV.	$\frac{\square}{\square}$

22. Evaluate: - - MGSE.7.NS.2

23. Convert to a decimal. MGSE.7.NS.2

24. Convert to a decimal. MGSE.7.NS.2

25. You have 9 math coins and each coin is worth -25 points. How many points is that all together? MGSE.7.NS.3

Math Study Guide 7th Grade Unit 2

1. Solve: $5x + 10 = -15$ CC.7.EE.3

2. Simplify: $(-4a + b - 2c) - (3a + 2b - c)$ CC.7.EE.1

3. Rewrite the expression using the distributive property: $12x + 18$ CC.7.EE.2

4. Rewrite the expression using the distributive property. CC.7.EE.2

5. Your bank account balance was \$235.24. After 2 checks were cashed (each for the same amount) your balance is now -\$45.58. What was the amount of each of those checks? CC.7.EE.4

6. Cam bought the items listed on the sign. If he was charged \$42.25 for which item was he charged twice? CC.7.EE.4

Socks...\$4.50
Hats....\$12.75
t-shirts \$12.25

7. Rich bought 5 cupcakes and one pie. He knows his total bill and knows the pie was \$6.89, but he wants to find the price of the cupcakes. How can he determine the price of each cupcake? CC.7.EE.4

8. Which choice is equivalent to the expression $(\quad) (\quad)$? CC.7.EE.2

A. $-5x - 16y$

B. $-7x - 8y$

C. $4x - 28y$

D. $8x - 28y$

9. Solve: $-3x + 12 = 48$

CC.7.EE.4

10. Solve: $-2(x - 4) = -8$

CC.7.EE.4

11. Evaluate:

CC.7.EE.4

12. Bo Peep needs to buy 10 new sheep

- Farm M: one sheep costs \$20
- Farm Q: set of 5 sheep costs \$75

How much money will Bo Peep save if she goes with Farm Q?

CC.7.EE.4

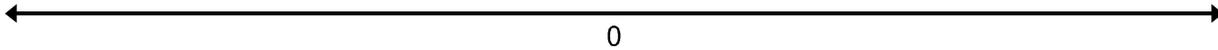
13. Write a problem that can be solved using the equation:

CC.7.EE.4

- A. 9 dogs and 14 cats cost \$100.
- B. Ty wants to buy 14 dogs, but they cost \$100, how much more does he need?
- C. Ty has saved \$14 and he earns \$9 each week. How many weeks will it take till he has \$100?

14. Label the number line below and draw the solution set for

CC.7.EE.4



15. Which inequality represents “nine more than three times a number is greater than 21”.

CC.7.EE.4

- A. B. C. D.

16. Frank has saved \$15 towards the \$95 phone he want to buy. He makes \$5 per week delivering papers. How many weeks must he work until he has enough money?

.7.EE.4

CC

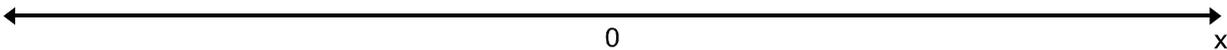
17. Which of the following equations is equivalent to $9x - 12 = 36$?

CC.7.EE.2

- A. $9x = 24$ B. $9x = 48$ C. $x - 12 = 4$ D. $x + 9 = 4$

18. Graph the inequality: $5y + 3 \leq -42$

CC.7.EE.4



19. Mel cleans houses.

CC.7.EE.4

- She earns \$7.50 every hour that she dusts.
- She earns \$10.00 every hour that she scrubs floors.
- She scrubbed floors for $1\frac{1}{2}$ hours and dusted for 2 hours. How much money did Mel earn?

7th Grade Unit 3 Study Guide

1. Sassy Jeans are \$90 a pair. If they are 40% off today, how much will they cost?

GSE.7.RP.3

2. The old pool held 70 gallons of water. The new pool holds 20% more than the old one. How much water does the new pool hold?

GSE.7.RP.3

3. Who makes the least money per hour?

GSE.7.RP.1

Person	Hours	Money
Ann	20	\$200.00
Bob	10	\$105.00
Cal	16	\$184.00

4. Who makes the most per hour?

5. Rare Shoes had a regular price of \$95, but Jay found them on sale for 50% off. Including the 8% sales tax, what did Jay pay for the shoes?

GSE.7.RP.3

6. Use the table to determine how many people ate if 426 grapes were used?

GSE.7.RP.2b1

<i>people</i>	<i>grapes</i>
	6
5	30
?	426

7. A store pays \$45 for a radio. The store marks the radio up 30%. What is the selling price for the radio?

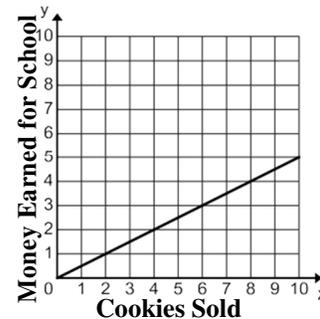
GSE.7.RP.3

8. Ted earns \$7.50 an hour. How many hours must he work to earn \$90?

GSE.7.RP.1

9. Which of the following scenarios is represented by the graph?

- A. For every cookie sold, the school earns \$0.25.
- B. For every cookie sold, the school earns \$0.50.
- C. For every cookie sold, the school earns \$1.00.
- D. For every cookie sold, the school earns \$2.00.



GSE.7.RP.2d

10. Which equation represents the relationship between the number of miles traveled and how much it cost?

- A.
- B.
- C.
- D.

GSE.7.RP.2c

miles (x)	cost (y)
1	\$4
2	\$8
3	\$12
4	\$16

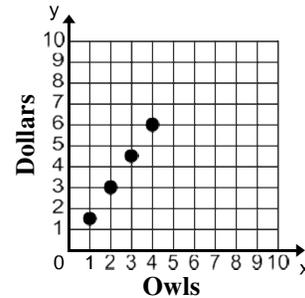
11. Ari borrowed \$2000 and paid it back over 3 years. The simple interest rate was 2% annually. How much interest did Ari pay over the three years?

GSE.7.RP.3

12. Bo bought a few items for \$93.84, not including tax. If the tax rate was 7%, what was the total cost of these items, including tax?

GSE.7.RP.3

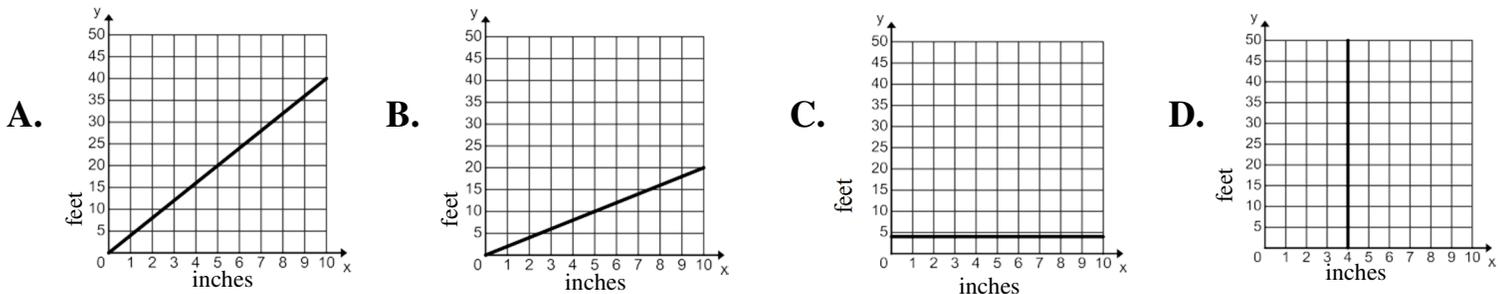
13. The graph represents the relationship between x (the number of owls fed) and y (the number of dollars spent). What is the amount of money that will be spent to feed 10 owls?



GSE.7.RP.2

14. A model plane is at the scale of 1 inch = 4 feet. Which graph represents this?

GSE.7.RP.2



15. It is $75\frac{3}{4}$ miles from my house to the Georgia Aquarium. On my map it measures $1\frac{1}{2}$ inches. What is the scale of the map?

GSE.7.G.1

16. Tony's bill at the restaurant was \$9.52. If he wants to leave a 20% tip, how much is that?

GSE.7.RP.3

Use the information in the box to answer questions 17 & 18.

**Lunch for 4 people
only \$39.50**

17. They want to leave a 20% tip. How much should they leave for the tip?

GSE.7.RP.3

18. If the sales tax is 5%, how much tax do they owe?

GSE.7.RP.3

19. The results of the first 100 students who voted are represented in the table. There are still 50 more students left to vote. Based on the early results, how many **MORE** votes do you expect Dan to get out of the 50 late voters?

C.7.RP.3

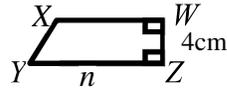
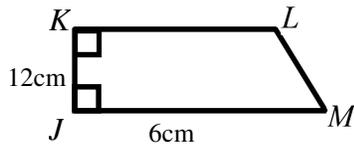
President	# Votes
Bob	25
Carol	65
Dan	10

20. A \$300 phone is on sale for 20% and you have a coupon for an extra 10% off. How much will you pay for the phone? (no tax) ?

GSE.7.RP.3

21. Pat borrowed \$2,000 to help pay college expenses. The interest rate was 5% annually, and she will repay the loan in 4 years. How much total interest will she pay during the 4 years?

GSE.7.RP.3



22. In the diagram above, figure $JKLM$ is similar to figure $ZWXY$. Which of the following proportions can be used to find the value of n ?

GSE.7.G.1

A. $\frac{12}{6} = \frac{4}{n}$

B. $\frac{12}{6} = \frac{n}{4}$

C. $\frac{12}{4} = \frac{6}{n}$

D. $\frac{12}{4} = \frac{n}{6}$

23. The scale on a road map is **1 inch = 40 miles**.

What is the actual length of a road that measures _____ inches on the map?

GSE.7.G.1

24. Billy Bob earns a 4% commission for each car he sells. He sells a car for \$18,750.

How much commission does he make for selling that car?

7th Grade Unit 4 Study Guide

Which of the following sets of side lengths below can make triangles?

GSE.7.G.2

1.) 2, 3, 4

2.) 2, 2, 5

3.) 2, 5, 5

4.) 2, 2, 2

5.) 9, 1, 1

yes or no

6.) WRITE A RULE:

Which of the following sets of angles CAN make triangles and which CANNOT make triangles?

GSE.7.G.2

7.) 20°, 40°, 30°

8.) 15°, 35°, 130°

9.) 20°, 100°, 60°

10.) 20°, 100°, 50°

can or cannot

can or cannot

can or cannot

can or cannot

11.) WRITE A RULE:

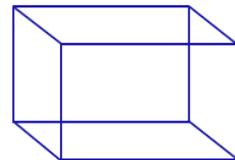
12.) What shape is the new face when a rectangular prism...

...is cut parallel to the base?

...is cut perpendicular to the base?

...is cut diagonally from top left to bottom right?

...has 1 corner cut off?



GSE.7.G.3

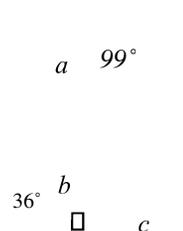
13.) Find the measure of:

GSE.7.G.5

Angle a _____

Angle b _____

Angle c _____



How many different triangles can you make with...

GSE.7.G.2

14.) ...angles of 40°, 40°, 80° ?

15.) ...angles of 80°, 77°, 23° ?

16.) ...side lengths of 12, 3, 7?

20.) Look at the pyramid. What shape would the new face be if the pyramid was

cut through the tip and perpendicular to the base?

GSE.7.G.3

17.) ...side lengths of 44, 20, 35?

... cut parallel to the base?

For number 18 & 19: The sides of a cube are 8 cm,

... cut through the tip and perpendicular to the base?

18.) Find the volume of the cube.

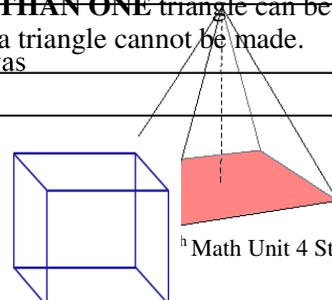
... cut through the tip.

ANSWER CHOICES

ONE, it's a unique triangle.

MORE THAN ONE triangle can be made.

NONE, a triangle cannot be made.

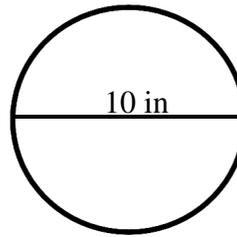


GSE.7.G.3

19.) Find the surface area of the cube.

GSE.7.G.3

21.) Find the area of the circle.

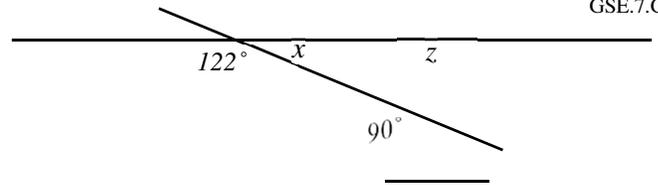


GSE.7.G.4

22.) Find the circumference of the circle.

Use diagram to answer questions 23 & 24.

23.) Solve for x .



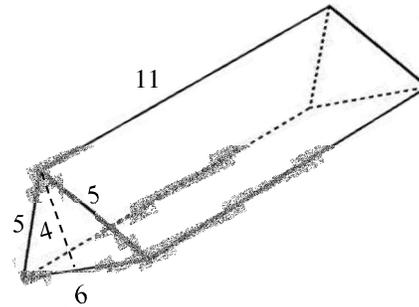
GSE.7.G.5

24.) Solve for z .

Not drawn to scale.

Use the diagram to answer questions 25 & 26.

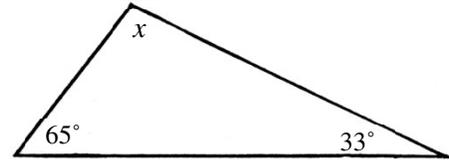
25.) Find the surface area of the prism.



GSE.7.G.6

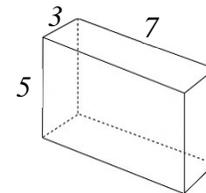
26.) Find the volume of the prism.

27.) Find the missing measure of the angle x .



GSE.7.G.5

28.) Find surface area of the rectangular prism.

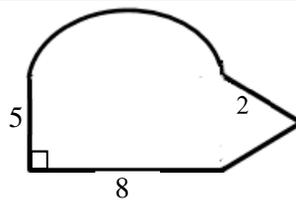


GSE.7.G.6

29.) Find the volume of the rectangular prism.

30.) Find the area of the irregular shape.

GSE.7.G.6

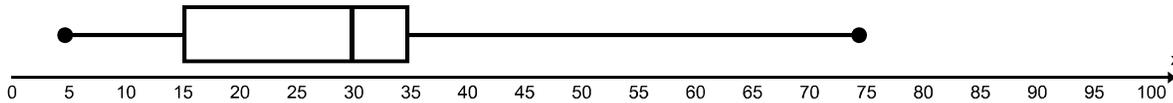


- 31.) What shape is the new face when a cylinder...
 ...is cut parallel to the base?
 ...is cut perpendicular to the base?
 ...is cut diagonally from top left to bottom right?



GSE.7.G.3

7th Grade Unit 5 Study Guide

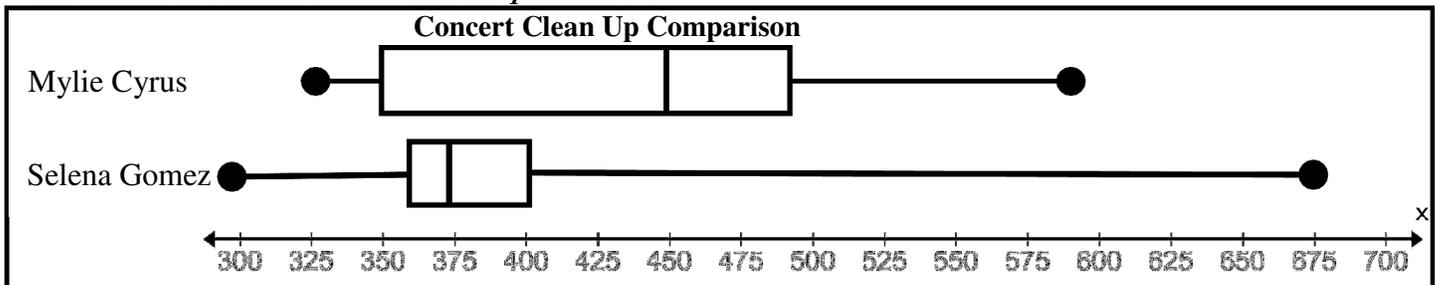


1. Median? GSE.SP.2
 2. Range? GSE.SP.2
-
3. Given the following set of data, what is the range? (2, 23, 34, 74, 21, 8, 9, 65) GSE.SP.2
-
4. What is the mean of the following numbers? **500, -320, 47, -16, -119, 622** GSE.SP.2

Decide if the scenarios are valid random samples. Then tell why or why not:

5. Survey every 10th person leaving a Dallas Cowboys game to find out what is the most popular football team in the USA. GSE.SP.1
6. Survey every 10th person at Walmart to find out which laundry detergent is most popular. GSE.SP.1

Use the box & Whisker Plots to answer questions 7-9



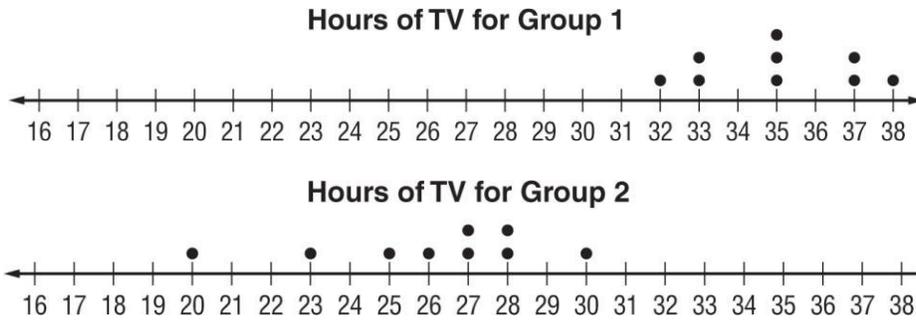
7. How much greater is the median cost of cleaning up after a Cyrus concert than a Gomez concert? GSE.SP.3
8. 75% of the time, cleanup after a Selena Gomez concert costs \$ _____ or less. GSE.SP.4
9. Which singer appear to have a more predictable cleanup cost? Explain why. GSE.SP.4
-
10. In which of the following cases would you survey a sample instead of the whole population? GSE.SP.1
- A. China wants to know how many beds most families have in their homes.
 B. You want to know how many kids in your class play soccer.
 C. Grandma wants to know how many people are coming to dinner.

D. FOX wants to know how many people watched American Idol last night.

11. A new school wants to find out what colors they should choose for their school colors. Which of the following samples would best represent the whole school population?

GSE.SP.1

- A. Survey every tenth student as they leave Chorus practice.
- B. At football practice, survey every third player as they take a water break.
- C. Put all students' names in a hat and survey the first 100 pulled from the hat.



12. Find and compare the MEAN number of TV hours for group 1 and for group 2.

Group 1 = _____ Group 2 = _____

Group _____'s MEAN was _____ higher than Group _____'s.

GSE.SP.4

13. Find and compare the MEDIANS for Group 1 _____ and for Group 2 _____.

Group _____'s MEDIAN was _____ more hours of TV than Group _____'s.

GSE.SP.4

Which Is Your Favorite Pet?

Class	Cats	Dogs	Fish	Total
7 th Grade	36	55	9	100
8 th Grade	34	57	9	100

14. List the pets in order of most favorite to least favorite.

GSE.SP.2

15. _____% chose cats; _____% chose dogs; _____% chose fish

GSE.SP.2

Yummy Fruits got a shipment of 400 baskets of apples. They want to find out how many total apples were in the shipment but they didn't have the time to count all of them, so they counted the apples in some of the baskets and recorded it in the chart below.

Basket Code	A1	M1	X1	G2	Z2	S3	J4	Q5	P6	N7
# of Apples	23	29	34	33	22	38	28	27	36	35

Use the random sample above to draw inferences:

16. How many apples are most likely to be in one basket?

GSE.SP.2

17. How many apples did Yummy Fruits probably get in the shipment all together?

GSE.SP.2

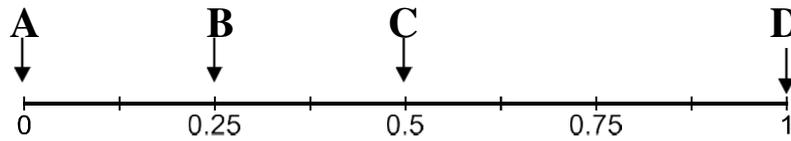
Decide if the following survey questions are BIASED or NOT?

18. In the election, will you vote for that lazy Lucy or will you vote for nice Nancy? _____

19. What is your favorite animal between dogs, snakes, cats, and birds? _____

20. On a scale of 1 to 5, how happy are you in your boring math class?

Study Guide for Unit
6 7th Grade Math
Use the diagram to answer questions 1 - 4.



1. What is the probability that the coin will land on HEADS? **Point A, B, C, or D?**

CC.7.SP.5

2. What is the probability that you are on Earth right now? **Point A, B, C, or D?**

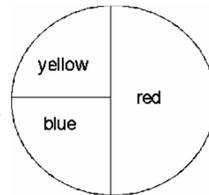
CC.7.SP.5

3. What is the probability that your brother is an elephant? **Point A, B, C, or D?**

CC.7.SP.5

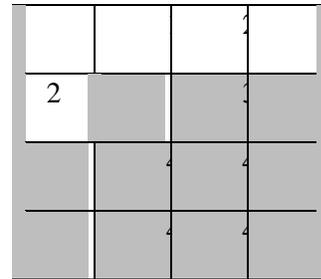
4. What is the probability that you will land on BLUE on that spinner?

Point A, B, C, or D?



CC.7.SP.5

5. If the cards to the right are shuffled, what is the probability that you will draw a 3 or a 4?



CC.7.SP.7

6. What is the probability that you will draw a one?

CC.7.SP.7

7. Draw a diagram to illustrate how many different options there are for math projects. *Hint: tree diagram?*

CC.7.SP.8

Math Project	
How	Individual Group
Type of Graph	Circle Graph Bar Graph Line Graph Box Plot
Presentation	Poster Power Point

8. Pat flipped a coin and it landed on heads 3 times in a row. What is the probability that it will land on heads the next time he flips it?

CC.7.SP.7

9. There are 7 girls and 2 boys on the DMS debate team. There are 3 girls and 4 boys on the HMS debate team. A student from each team is chosen to debate. What is the probability that both students chosen will be boys?

CC.7.SP.8

10. What is the probability of tossing 4 coins and getting tails on all four?

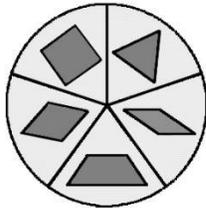
CC.7.SP.8

11. Josh has a six-sided number cube. If he rolls it 60 times, how many times should Josh expect to roll a six?

CC.7.SP.6

12. What is the probability that you will roll a 6 on the number cube AND spin a triangle on the spinner?

CC.7.SP.8





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13. Jack and Jill are playing a game. They flip 2 coins and if BOTH coins land on HEADS, Jill wins. If one lands on tails and one lands on heads, Jack wins. If both land on tails, no one wins.

Is this a fair game? Why or why not?