

Day 5 How to Study for and Take Tests Math Test Strategies

Name: _____

Date: _____

Math Mnemonics for word problems.

Mnemonics for Math Problem Solving			
Ride R ead and understand the problem I dentify the operation D raw a picture of the problem E valuate the answer and check it	Tins T hought I nformation N umber sentence S olution sentence	Star S earch the word problem T ranslate the problem A nswer the problem R eview the solution	Fast Draw F ind what you are solving for A sk yourself, "What information is given?" S et up the equation T ie down the sign D iscover the sign R ead the problem A nswer the question or draw W rite the answer

Try the different processes above with the following problems.

Jane had $\frac{7}{8}$ gallon of paint. Her brother took $\frac{1}{4}$ gallon to paint his model boat. Jane needs at least $\frac{1}{2}$ gallon to paint her bookshelf. Did her brother leave her enough paint?

yes no

How much paint did he leave her?

Which Mnemonic would be most helpful in answering this question?

Show your work - number sentence, diagram, other tool used to help solve this.

Responding to math problems

read, Read, READ the questions thoroughly before answering. Very often, the questions will be prepared knowing that some students won't actually read the whole question. You may think you have the correct answer because it appears on the list, but if you read the question completely and do the problem correctly, you will get a different answer.

1. What is the difference between the sum of the following set of numbers estimated to the nearest tenth and the exact sum?

$$42.45 + 1.6 + 6.48 + 19 + 25.52$$

- A. 95.1
- B. 0.05
- C. 73
- D. 0.13
- E. 27

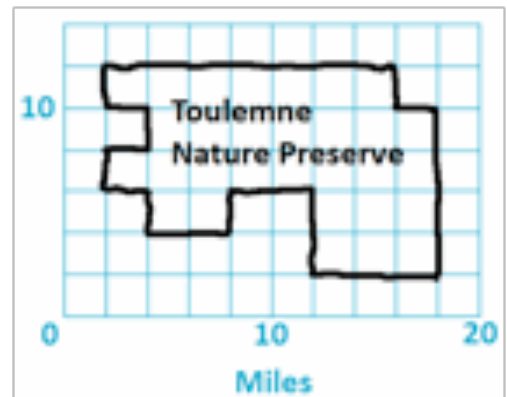
2. When playing their favorite video game "Space Attack", Bobby scored 139,750 points, while Alex scored 99,190 points. Which of the following is the best estimate of how many more points Bobby scored than Alex?

- A. 410,000 points
- B. 59,000 points
- C. 41,000 points
- D. 5,900 points
- E. 4,100 points

3. Use the diagram below to answer the question that follows.

Approximately how far would a hiker travel if she traveled all the way around the Toulemne Nature Preserve, following the exact border, but never entering the preserve?

- A. 30 miles
- B. 40 miles
- C. 60 miles
- D. 70 miles
- E. 80 miles



45 Use the statements below to answer the question that follows.

Robbie the Breakfast-Serving Robot will always bring his owner John breakfast in bed on Saturday mornings, unless:

- His power has been switched off.
- There are no breakfast foods available.

If it is Saturday morning and Robbie does not serve John breakfast in Bed, then it must be true that:

- A. Robbie's power has been switched off.
- B. There are no breakfast foods available.
- C. Robbie's power has been switched off and there are no breakfast foods available.
- D. Robbie's power has been switched off or there are no breakfast foods available.
- E. Robbie has malfunctioned.

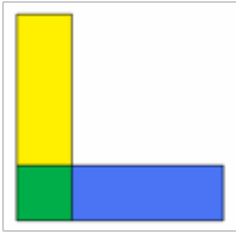
5. A map of California is drawn to scale where one inch equals 5 miles. If Rest Stop A and Rest Stop B are one foot apart on the map, how many miles apart are they?

- A. 5 miles
- B. 25 miles
- C. 26 miles
- D. 50 miles
- E. 60 miles

6. At sea level, water boils at what temperature?

- A. 212 degrees Fahrenheit
- B. 200 degrees Fahrenheit
- C. 100 degrees Fahrenheit
- D. 98.6 degrees Fahrenheit
- E. 32 degrees Fahrenheit

7. A yellow rectangle and a blue rectangle having identical dimensions intersect to form a green square as pictured below.



Which of the following statements must be true?

- A. If you know the area of the green region, you can find the areas of the yellow and blue regions.
- B. If you know the area of the yellow region, you can find the areas of the green and blue regions.
- C. If you know the dimensions of the blue region, you can find the areas of all three regions.
- D. If you know the dimensions of green region, you can find the areas of all three regions.
- E. If you know the dimensions of the square, you can find the circumference of all the shapes.

8 A train is traveling at an average speed of 60 miles per hour on a straight northbound track from Portland to Seattle. The distance from Portland to Seattle is 174 miles. What missing piece of information is needed to determine how much longer it will take for the train to reach its destination?

- A. The distance from Portland to Seattle.
- B. The distance the train has traveled thus far.
- C. The train's highest speed reached.
- D. The time it takes the train to travel one mile.
- E. The number of miles the train travels in one hour.

9. An elf in Santa's Workshop can typically build two giant robot toys a week. If the elf works year-round, how many giant robot toys is he likely to produce in one year?

- A. 24 giant robot toys
- B. 26 giant robot toys
- C. 52 giant robot toys
- D. 96 giant robot toys
- E. 104 giant robot toys

10. Which of these units could be used to describe volume?

- A. Inches
- B. Square inches
- C. Gallons
- D. Pounds
- E. Tons

11. A bag of assorted candy contains 11 peppermints, 8 chocolates, 13 gumdrops, and 9 licorices. Amy randomly takes a gumdrop from the bag and eats it. What is the probability that the next candy she takes from the bag will be a gumdrop or a peppermint?

- A. $\frac{23}{40}$
- B. $\frac{13}{20}$
- C. $\frac{24}{41}$
- D. $\frac{1}{3}$
- E. $\frac{1}{5}$

12. Erin starts with the number 4, adds -3, then subtracts -4. What is the result?

- A. 5
- B. 3
- C. -7
- D. -3
- E. 11

13. Joe, a custom automotive painter, works eight hours per day, Monday through Friday, and paints approximately one car every four hours. How many cars would he paint in a typical work week?

- A. 10
- B. 40
- C. 5
- D. 12
- E. 18

14. Four students get 90s on a test, three get 70s, 2 get 60s and one gets an 80. What is the mean test score in this group?

- A. 90
- B. 74
- C. 77
- D. 80
- E. 66

15. Determine the mode for the following set of numbers.

24, 32, 44, 32, 16, 24, 50, 24

- A. 24
- B. 28
- C. 30.75
- D. 31.75
- E. 32

16. If you were to flip a coin five times, what would be the probability that you would flip tails all five times?

- A. $1/5$
- B. $1/10$
- C. $1/25$
- D. $1/32$
- E. $1/50$

17. Bill is in the 8th grade and takes a standardized math test. Use his test scores below to answer the question that follows.

Bill's test scores indicate that:

Raw Score: 62 Percentile: 90 Stanine: 8 Grade Equivalent: 11

- A. He scored as well as or better than 62 of the test takers.
- B. 10 test takers scored better than he did.
- C. He should be promoted to an 11th grade math class.
- D. His stanine score is average when compared to his peers.
- E. He scored as well as or better than 90% of the test takers.

18. Below, the standard addition algorithm is being used to add three two-digit numbers.

If x , y and z each represent a different digit from 0 to 9, what is the value of $(x)(y)(z)$?

$\begin{array}{r} 4z \\ 27 \\ +x5 \\ \hline y14 \end{array}$
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- A. 114
- B. 15
- C. 8
- D. 7.6
- E. 12

19. What is the remainder in the following equation?

$$24 \overline{) 685} \text{ remainder} = ?$$

- A. 2
- B. 10
- C. 13
- D. 16
- E. 28

20. Jill decides to move her fish from a 20 gallon aquarium to a 50 gallon aquarium. She added 3 tablespoons of salt to her old aquarium. If she wishes to maintain to same salinity level, how many tablespoons should she add to her new aquarium?

- A. 7 1/2
- B. 8 1/2
- C. 6
- D. 3
- E. 10 1/2

21. The expression $(-7)(5)(-2)$ simplifies to which of the following?

- A. -70
- B. -14
- C. -4
- D. 14
- E. 70

22. Mike asks Billy to help him run his lemonade stand. He'll either pay him $\frac{2}{5}$ of $\frac{1}{2}$ of the stand's profits, or $\frac{1}{3}$ of $\frac{3}{4}$ of the stand's profits. Which should Billy choose to maximize the amount he will earn, and by what amount will his earnings be increased?

- A. Billy should choose $\frac{1}{3}$ of $\frac{3}{4}$; he'll earn $\frac{1}{15}$ more.
- B. Billy should choose $\frac{1}{3}$ of $\frac{3}{4}$; he'll earn $\frac{1}{20}$ more.
- C. Billy should choose $\frac{2}{5}$ of $\frac{1}{2}$; he'll earn $\frac{1}{15}$ more.
- D. Billy should choose $\frac{2}{5}$ of $\frac{1}{2}$; he'll earn $\frac{1}{20}$ more.
- E. It doesn't matter; either way, Billy will earn exactly the same amount.

23. What is the lowest common denominator for the three fractions listed to the right? $\frac{1}{5}, \frac{1}{8}, \frac{1}{10}$

- A. 1
- B. 40
- C. 80
- D. 200
- E. 400

24. At the end of a factory assembly line, completed widgets are deposited into a box until it is filled. If after 10 minutes the box contains 25 widgets and it takes 2 hours total to fill up a box, how many widgets must each box hold?

- A. 48 widgets
- B. 75 widgets
- C. 300 widgets
- D. 350 widgets
- E. 500 widgets

25. At Alan's Produce, all produce is 20% off on Tuesdays. If a head of lettuce is normally \$2.50, how much would it cost on Tuesday?

- A. \$2.00
- B. \$2.25
- C. \$2.75
- D. \$1.75
- E. \$1.80

26. Express the fraction $\frac{5}{16}$ as a percentage rounded to the nearest hundredth.

- A. 31%
- B. 31.25%
- C. 32%
- D. 33.33%
- E. 83.33%

27. Mary works 39 hours a week and gets paid \$9.25 per hour. She receives a raise, and now gets paid \$390 per week. By how much did her weekly pay increase?

- A. \$200
- B. \$22.50
- C. \$29.25
- D. \$17.50
- E. \$380.75

28. Lisa is a manager at a thriving marketing company. Her boss recently gave her authorization to increase her department's yearly party planning budget by 25% bringing it to \$1,500. What was the department's party planning budget prior to the increase?

- A. \$1,250
- B. \$1,200
- C. \$1,125
- D. \$1,100
- E. \$1,050

29. Solve for x in the equation below.

$$2(x + 2) - 4x = 12$$

- A. 12
- B. -2
- C. 6
- D. -4
- E. 16

30. Simplify the expression below: $5(3z - 7z + 4)$

- A. $-20z + 20$
- B. $50z + 20$
- C. $-4z + 9$
- D. $-50z + 20$
- E. $20z + 20$

31. Use the rectangle pictured below to answer the following question:

If you know the length of Side A, what else can you determine about this rectangle?



- A. The area of the rectangle.
- B. The length of Side B.
- C. The length of Side C.
- D. The length of Side D.
- E. The width of the rectangle.

32. Matt & Ben are planning to drive from Boston to LA. They'll make the trip over seven days, driving 425 miles per day. If their car gets 30 miles per gallon, how much should they budget for gas on the trip?

What needed piece of information is missing to solve the problem above?

- A. The total distance from Boston to LA.
- B. Their average traveling speed in MPH.
- C. How many times they plan to stop.
- D. How many gallons the gas tank can hold.
- E. The average cost of a gallon of gas.

33. Huntsville's population grows from 25,000 to 28,000. What is the percent increase in Huntsville's population?

- A. 10.7%
- B. 200%
- C. 9%
- D. 12%
- E. 3.5%

34. Nathan, a tutor, buys 5 calculators for \$7.50 each at a store, planning to provide one to each of his clients. However, the next day, he discovers that the same calculator has gone on sale for \$5.00 and also discovers that he will only have three tutoring clients instead of five. He returns the five calculators and purchases three calculators at the new sale price. He uses the following expression to determine the amount he should receive back from the store.

$$(5 \times \$7.50) - (3 \times \$5.00)$$

Which of the following expressions could Nathan also have used?

- A. $5 (\$7.50 - \$5.00)$
- B. $\$7.50 - \5.00
- C. $(5 \times \$7.50) - \5.00
- D. $3 (\$7.50 - \$5.00) + 2 \times \$7.50$
- E. $(5 \times 3) - (\$7.50 \times \$3.50)$

35. Elena wants to calculate 35% of 82, so she uses the following equation:

$$82 \times 0.35$$

Which of the following equations could she also use to correctly solve the problem?

- A. $35 \div 82 / 100$
- B. $(35/100) \times 82$
- C. $35/100 - 82$
- D. $(35/82) \times 100$
- E. $82/35$

36. In 2008 the population of Odessa County was 62,000, but it has fallen each of the last two years. If it fell 10% in 2009 and then another 5% in 2010, what is the current population of Odessa County?

- A. 52,700
- B. 53,010
- C. 55,000
- D. 68,200
- E. 70,990

37. The chart below shows the relationship between two values, X and Y.

Given the relationship, what would be the value of Y that is missing?

- A. 5
- B. 4.5
- C. 3.5
- D. 3
- E. 6

X	Y
1	1.5
2	3
3	
4	6
5	7.5
6	9

38. Barbara's Catering Company makes the best fruit salad despite using only four ingredients. They use four apples for every mango, two pears for every apple, and one pineapple for every mango. If they used 8 pineapples in their most recent batch, how many total pieces of fruit did they use?

- A. 32
- B. 64
- C. 96
- D. 112
- E. 144

39. Jane is thinking of a number between -10 and 10. If you multiply Jane's number by -2, then subtract 2, the result is greater than 6. Which of the following statements must also be true?

- A. Jane's number is less than -4.
- B. Jane's number is greater than -4.
- C. Jane's number is greater than 2.
- D. Jane's number is less than -2.
- E. Jane's number is 0.

40. Which of the following mathematical statements is true?

A. $3\frac{1}{2} < 3\frac{1}{4} \leq 3\frac{2}{8}$

B. $3\frac{2}{8} > 3\frac{1}{4} > 3\frac{1}{2}$

C. $3\frac{1}{4} < 3\frac{1}{2} \leq 3\frac{2}{8}$

D. $3\frac{1}{2} > 3\frac{2}{8} \geq 3\frac{1}{4}$

E. $3\frac{1}{2} \geq 3\frac{1}{4} > 3\frac{2}{8}$

41. Which of the following expressions has the same value as $4(x+3)/2$?

A. $1/2(4x+3)$

B. $12x^2$

C. $4x+2/3$

D. $1/42+x+3/2$

E. $1/2(4x+12)$

42. Which of the following is ANOTHER way to express the expression below?

$[4(17) + 3(25)] \times 5$

A. $[7(38)] \times 5$

B. $[12(425)] \times 5$

C. $20(17) + 15(25)$

D. $54(17) - 3(25)$

E. $20(85) + 15(125)$

43. Which of the following values is between 0.0043 and 0.029?

- A. 0.031
- B. 0.0092
- C. 0.08
- D. 0.0039
- E. 0.1

44. Which of the following values falls between -1.489 and -1.631?

- A. -1.481
- B. 1.526
- C. -1.491
- D. 1.635
- E. -1.641

45. Jane is one of 50 students to take a standardized math test that includes 100 multiple choice questions. If she has the highest score of any student with a raw score of 87, what is her percentile score?

- A. 50
- B. 80
- C. 87
- D. 95
- E. 99

46. If the gym is located 11 miles away from Dayan's house and the juice bar is located 6 miles away from the gym, which of the following conclusions must be true?

- A. Dayan's house is at least 5 miles from the juice bar.
- B. The gym is located west of Dayan's house.
- C. The gym is exactly 5 miles away from the juice bar.
- D. Dayan's house is closer to the juice bar than the gym.
- E. Dayan's house is 17 miles from the juice bar.

47. Use the table below to answer the question that follows:

The tram schedule to the right shows the departure and return times for each line. Except for a service break, all trams take the same amount of time between their departure and return to the station. What is the missing start time for the C-Line?

- A. 9:00 am
- B. 8:50 am
- C. 8:45 am
- D. 8:40 am
- E. 8:35 am

Scranton Airport Tram Schedule

Line	Departure	Return
A	6:00 am	6:55 am
B	7:00 am	7:55 am
Service	8:00 am	8:30 am
C		9:30 am

48. Use the table below to answer the question that follows.

According to the table to the right, which of the following statements is true of robberies in 2007?

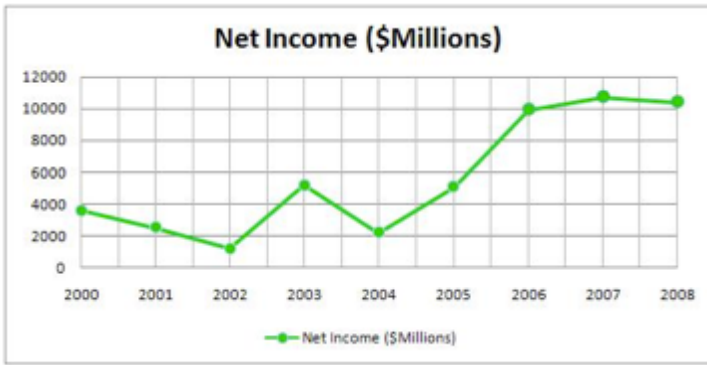
- A. New York had more robberies than Los Angeles.
- B. San Antonio had more robberies than Phoenix.
- C. San Jose had the most robberies of the cities listed.
- D. Dallas had 583 total robberies.
- E. Philadelphia is the safest city in America.

Robbery rates based on cases per 100,000 for all of 2007.

City	State	Population	Robberies
Chicago	Illinois	2,824,434	546
Dallas	Texas	1,239,104	583
Detroit	Michigan	860,971	764
Houston	Texas	2,169,544	529
Los Angeles	California	3,870,487	348
New York	New York	8,220,196	265
Philadelphia	Pennsylvania	1,435,533	715
Phoenix	Arizona	1,541,698	321
San Antonio	Texas	1,316,882	186
San Diego	California	1,261,196	166
San Jose	California	934,553	114

SOURCES: FBI Uniform Crime Reports (2007)

49. Use the graph below to answer the question that follows.



The graph above shows the net income of Chase bank from the year 2000 to the year 2008. In which year did Chase Bank experience the greatest ratio of improvement over the previous year?

- A. 2002
- B. 2003
- C. 2006
- D. 2007
- E. 2008

50. Use the chart below to answer the question that follows:

Approximately how many total students were surveyed when compiling the bar graph to the right?

- A. 70
- B. 90
- C. 110
- D. 130
- E. 150

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