

NAME _____
MESA CENTER _____
SCHOOL _____
GRADE LEVEL _____
CURRENT MATH COURSE _____

2006 Junior PRELIMINARY

Solo Math Competition

General Math Exam:

For students currently enrolled in a General Math Class

RULES AND PROCEDURES:

1. Complete the information at the top of this sheet.
2. Complete the information on the Scantron sheet.
3. Calculators are NOT permitted.
4. Taking the examination is STRICTLY AN INDIVIDUAL EFFORT.
5. You may write in the test booklet (NO SCRATCH PAPER IS PROVIDED).
6. Record all answers on the Scantron sheet.
7. You will have 45 minutes to complete this test.

DO NOT START UNTIL YOU ARE INSTRUCTED TO DO SO.

GOOD LUCK

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The machine usually sells for \$450, but it is on sale at 12% off. If the sales tax rate in Robynn's state is 5%, how much is the total bill for the washer?

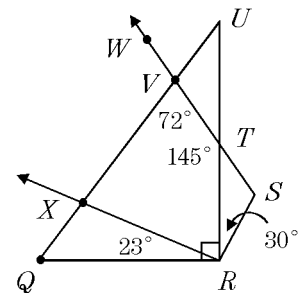
2. Solve: $\frac{18}{11} = \frac{49.5}{s}$
- a) 12 b) 18.75 c) 30.25 d) 81

3. On a series of four consecutive running plays, Ricky Watters of the Philadelphia Eagles gained 2 yards, lost 5 yards, gained 14 yards, and lost 3 yards. What positive or negative number represents his total net yardage for the series of plays?
- a) -24 b) -6 c) 8 d) 24

4. If x _____
- a) $\frac{75}{x}$ apples b) $3x$ apples
c) $6x$ apples d) $10x$ apples

5. Find c given $-0.03c = 6$.
- a) -2000 b) -200 c) 0.2 d) 2

6. In the figure, find the measure of $\angle VTU$.
- a) 10 b) 25
c) 35 d) 90



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7. If the radius of a circle is tripled, how does the circumference change?
- a) multiplied by 9 b) increased by 9
c) cubed d) tripled
8. What is the circumference of a circle with a diameter of 3.6 cm? (Write your answer in terms of π .)
- a) 3.6π cm b) 7.2π cm
c) 6.3π cm d) 12.6π cm
9. Which car has the greater fuel efficiency?
- a) one that travels 350 miles on 15 gallons
b) one that travels 200 miles on 7 gallons
c) one that travels 425 miles on 15 gallons
d) one that travels 175 miles on 10 gallons
10. A basketball player scores 162 points in 9 games. At this rate how many points will she score in a 24-game season?
- a) 432 b) 451 c) 484 d) 493
11. 90% of what number is 63?
- a) 7 b) 28 c) 70 d) 140
12. Find the sum $87.0021 + 14.12 + 20 + 11.013$.
- a) 131.1351 b) 131.1361
c) 132.1351 d) 133.1361

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$$\frac{(-5 + 2)^2 - 4(6 \div 2)}{1}$$

- a) -21 b) -3 c) 37 d) 135

14. Find the solution of $-8 = -4r - 13$.

- a) $-\frac{5}{4}$ b) $-\frac{1}{2}$ c) $\frac{11}{3}$ d) 7

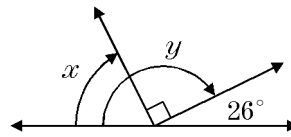
15. Simplify: $\frac{3}{5} - \frac{2}{11}$

- a) $\frac{1}{6}$ b) $\frac{4}{11}$ c) $\frac{2}{5}$ d) $\frac{23}{55}$

16. 15% of Maria's class is female. If there are 80 people in her class, how many are male?

- a) 42 b) 65 c) 68 d) 75

17. Given $z = 26$, find the values of x and y in the figure.



- a) $x = 50$ and $y = 144$ b) $x = 62$ and $y = 132$
c) $x = 50$ and $y = 132$ d) $x = 62$ and $y = 144$

18. The local Red Cross Blood Center has a goal of _____

August 1, the center has received 2800 units. If donations continue at the same rate, will the center reach its goal or fall short of it, and by how much?

- a) reach with a surplus of 480 units
b) fall short by 120 units
c) reach exactly
d) fall short by 400 units.

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19. Simplify: $4\frac{7}{12} + 2\frac{8}{15} + 6\frac{3}{10}$
 a) $12\frac{1}{5}$ b) $12\frac{18}{37}$ c) $13\frac{1}{10}$ d) $13\frac{5}{12}$

20. Two numbers are in the ratio 1:5 and their sum is _____.
 a) 9 b) 10 c) 15 d) 45

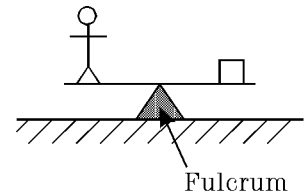
21. The greatest common factor of 8, 12, and 15 is _____.
 a) 1 b) 4 c) 5 d) 6

- _____ $(-6)(-5)(-2)(-7)$
 a) -125 b) -104 c) 420 d) 785

23. Find: $\frac{\frac{1}{10}}{-\frac{11}{6}}$
 a) $-\frac{15}{16}$ b) $-\frac{4}{11}$ c) $-\frac{1}{11}$ d) $-\frac{3}{55}$

24. In the given figure, a board is balanced on a fulcrum. To balance the board on the fulcrum _____ distance from the fulcrum must be the same on _____ from the fulcrum, estimate how many feet from the fulcrum is the 100lbs box when they are in balance?

- a) 10 feet
 b) 14 feet
 c) 18 feet
 d) 25 feet



25. Write 44 centimeters to 440 millimeters as a ratio of whole numbers.
 a) 1:1 b) 2:1 c) 7:3 d) 10:1

Answer List

1. c
2. c
3. c
4. b
5. b
6. c
7. d
8. a
9. b
10. a
11. c
12. c
13. b
14. a
15. d
16. c
17. b
18. d
19. d
20. a
21. a
22. c
23. d
24. b
25. a