



Exam Sheet  
Grade-6  
GSW Junior  
Mathematics  
Tournament

March 8,

2014

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Grade -6

**DO NOT OPEN UNTIL YOU ARE INSTRUCTED TO DO SO**

1) 25% of 144 = \_\_\_\_\_

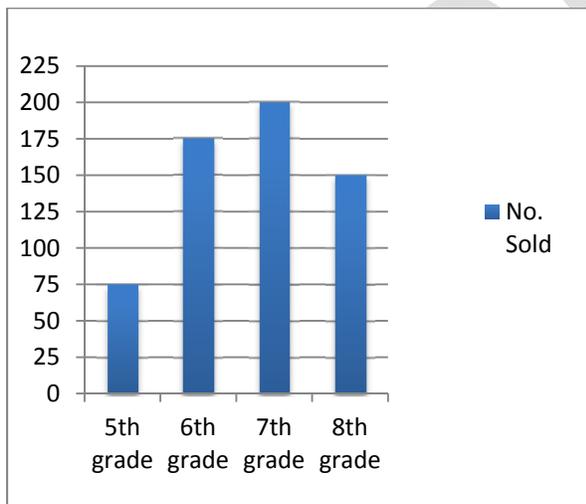
2) What percent of 80 is 32? \_\_\_\_\_

3) If there are 5 cars for every 20 students at the local high school, how many cars would there be for 360 students?

4) 1 tablespoon =  $\frac{1}{16}$  cup. How many tablespoons are there in 1.5 cups?

5) On a certain map 2 inches is equivalent to 30 miles. How far apart are two cities if on the map they are 7 inches apart?

6)



The graph above shows the sale of tickets for an event at Martin Jr. High. How many more tickets did the 7th graders sell than the 5th graders?

7) What is the greatest common factor of 60 and 72?

8) What is the largest prime factor of the value of  $13^2 - 2^2$ ?

9) Beth and Trey see CD's priced at \$15 each. The store is offering a buy-2-get-one-at-60%-off deal. What is their cost for 3 CD's?

10)  $48 \div (1/2) + 10 - 2 \times 3 = ?$

11) If  $1 + 6x = 8x - 7$ , then  $x = ?$

12) Consider these fractional numbers. What is the sum of the two larger ones multiplied by 12?

$$\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \frac{5}{8}$$

13) What is the length of the side of a square with area numerically equal to its perimeter?

14) You go to bed at 9:45 pm and get up the next morning at 7:10 am. How long were you in bed?

15) How many days are there between March 8, 2014 and March 8, 2024, knowing that 2016, 2020, and 2024 are leap years?

16) How many 16 oz bottles of water will it take to fill a gallon jug (128 oz)?

17) Using 2.54 cm per inch, tell how many cm there are in 50 inches.

18) Barak makes 75 on each of his first four math tests. What does he need to make on his fifth test to reach an 80 test average?

19) The table below shows the number of miles jogged by Michele in one week of exercise. What percent of the total miles did she jog on the weekend (Sat & Sun)?

Day	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Miles	5	3	2	3	4	6	7

20) What is the tenth term in the sequence showing the first four terms?

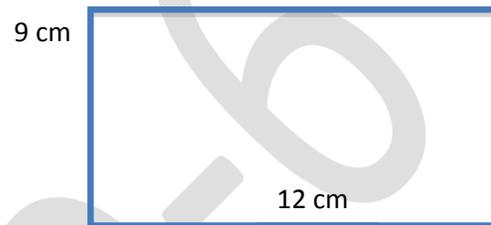
5, 8, 11, 14, ...

21) One box measures 2" x 3" x 5" and another measures 6" x 9" x 15". How many times larger is the volume of the second box? Choose from 3, 6, 9, 24, or 27.

22) What is the product of the largest 1-digit prime number and the smallest 2-digit prime?

23) If snow is falling at the rate of  $\frac{2}{3}$  inch per hour, how much snowfall will be recorded in half a day?

24) What is the area of the largest triangle that can be inscribed in a 9 cm x 12 cm rectangle?



25) If watermelons in farmer Cliett's field weigh an average of 25 lbs each and 444 are loaded onto a truck, what will be the expected weight of the melons on this truck?

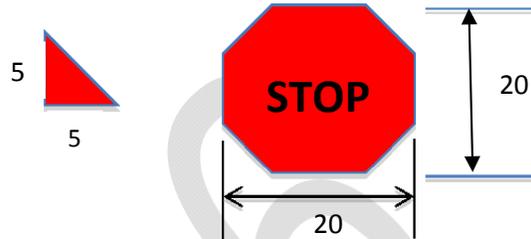
26) Thirteen vans of people show up at Billy's Burgers with the following number of people per van. What is the median number of people per van?

6, 5, 7, 6, 6, 6, 4, 8, 9, 9, 8, 10, 9

27) Suppose that you triple a number and add 6; then triple that number and get 81. What was the starting number?

- 28) A cube has a surface area of 384 sq cm; what is the length of one side in cm?
- 29) A recipe for cornbread calls for  $1\frac{1}{2}$  cups of cornmeal to make 6 servings; how many cups of cornmeal would be required for 10 servings?
- 30) Apples cost 40 cents and oranges cost 50 cents each and you purchase the same number of each fruit; how many pieces of each fruit can you buy for \$10.00?
- 31) Which is larger  $100\pi$ ,  $18^2$ , or  $6^3$ ?
- 32) Which is more  $5 \times (1/2)$ ,  $5 \div (1/2)$ , or  $5 + (1/2)$ ?
- 33) If Five Gal's Burgers offers 10 different sandwiches, 7 different sides, and 5 different drinks; how many different possible choices are possible consisting of one sandwich, one side, and one drink?
- 34) What is the product of the four smallest prime numbers?

- 35) A STOP sign is cut from a 20" x 20" rectangular piece of metal. If a 5" x 5" triangle is removed from each corner to make an octagon, what is the area of the octagon?



- 36) What is the least common multiple (LCM) of 9, 12, and 15?
- 37)  $\sqrt{2^2 + 3^2 + 6^2} = ?$
- 38) A pair of shoes sells for \$105 plus 7% sales tax. What is the final cost?
- 39)  $(1^2 + 3^2 + 5^2)^2 = ?$
- 40) A wheel of radius 5 inches is rolled in a straight line for 10 revolutions. How far does the wheel travel? (Use  $\pi = 3.14$ )

Answers:

1. 36
2. 40% (or just 40)
3. 90
4. 24
5. 105
6. 125
7. 12
8. 11
9. \$36
10. 100
11. 4
12. 17
13. 4
14. 9 hrs, 25 min
15. 3653
16. 8
17. 127
18. 100
19. 40% (or just 40)
20. 32
21. 27
22. 77
23.  $\frac{2}{3}$
24. 54 sq cm
25. 11,100 lbs
26. 7
27. 7
28. 8 cm
29.  $2\frac{1}{2}$  cups
30. 22 (11 apples + 11 oranges)
31.  $18^2$
32.  $5 \div (\frac{1}{2}) = 10$
33. 350
34. 210
35. 350
36. 180
37. 7
38. \$112.35
39. 1225
40. 314 in



Exam 3000

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Grade -7

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1. Find the sum: 476

679

549

2. Find the product:  $29 \times 57$ .

3. Find the quotient:  $104.4 \div 8.7$

4.  $\frac{(-10 - (-5))}{(-4 + (-1))} = ?$

5. Find the product:  $\frac{21}{60} \times \frac{25}{35}$

6. Find the sum and express the answer as a mixed fraction in lowest terms:

$$2\frac{1}{3} + 1\frac{1}{2}$$

7. Find the quotient:  $\frac{16}{33} \div \frac{20}{55}$

8. Find the quotient and express the answer as a mixed fraction in lowest terms:

$$3\frac{1}{4} \div 2\frac{2}{3}$$

9. What number when multiplied by  $\frac{1}{2}$  and adding 11 gives 33?

10. What is 25% of 140?

11. 198 is what percent of 225?

12. If 7 oranges cost \$5.74 before taxes, how much do 10 oranges cost?

13. If a car travels at a constant rate of 52 miles per hour, how far can it travel in  $2\frac{3}{4}$  hours?

14. A checkerboard has 64 squares. Each of the two players begins with 12 checkers. What fraction of the squares hold pieces at the start of the game?

15. Express as a decimal:  $11 \div 25$ .

16. Which one of the following is not a prime number: 23, 29, 41, 51, or 59?

17. The population of Jackson in 2000 as 3,000. If the population of Jackson in 2010 was

3,450, by what percent did the population increase?

18. Which of the following are solutions of the inequality

$$\frac{x}{2} - 2 > 3/2:$$

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11?

19. Solve for x:

$$-2(3x - 4) + 1 = 5(3 - 4x) + 6.$$

20.  $-2(3x - 4) - 5(2x + 6) = ?$

21. What is the mean of this data:

1, 1, 1, 2, 2, 3, 4, 10?

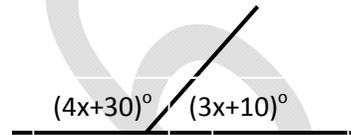
22. A die has six sides with the numbers 1 through 6 on its sides. What is the probability of rolling the die and having either a 1 or 2 on top?

23. A box has dimensions 4 by 5 by 10. How many cubic units is its volume?

24. A box has dimensions 4 by 5 by 10. How many square units is its surface area?

25. Joe made 88 and 87 on his first two mathematics tests. What must he make on the third test to have a 91 average?

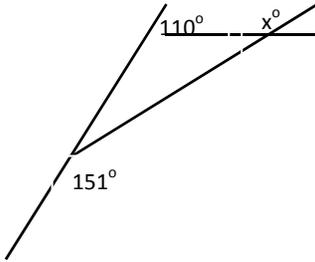
26. What is the degree measure of the smallest angle pictured?



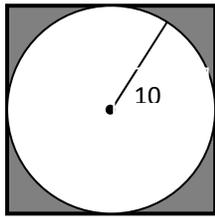
27. A string 20 inches long is cut in two pieces. The short piece is  $2x$  and the long piece is  $4x - 4$ . How long is the short piece?

28. The formula that relates Fahrenheit and Celsius temperatures is  $F = \frac{9}{5}C + 32$ . At what temperature are both F and C the same?

29. Find  $x$ .



30. A circle with radius 10 cm is inscribed in a square. Determine the area of the shaded region. ( $\pi = 3.14$ )



31. In a survey of 7<sup>th</sup> grade students' ice cream preferences, 38 preferred chocolate, 32 vanilla, 18 strawberry, and 12 preferred other flavors. What percent of the students preferred chocolate?

32. The degree measures of the three angles of a triangle are  $x$ ,  $2x$ , and  $3x$ . What is the degree measure of the smallest angle of the triangle?

33. What is the greatest common factor of 28 and 35?

34. What is the product of 2.8 and 7.6?

35. You have 18 stamps from Mexico in your stamp collection. These stamps make up  $\frac{2}{11}$  of your entire collection. The rest of the stamps are from the United States. How many stamps from the United States do you have?



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Grade -8

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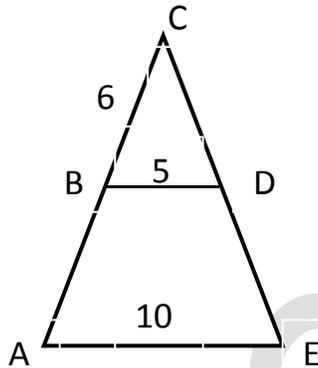
1. Find the sum.  $\begin{array}{r} 236 \\ 587 \\ \hline 148 \end{array}$
2. Find the product of 29 and 47.
3. What is  $32.4 \div 2.7$ ?
4. What is the product of 3.9 and 4.7?
5. Express  $2\frac{1}{3} + 3\frac{1}{6}$  as a mixed fraction in lowest terms.
6. Express  $\frac{12}{25} \div \frac{36}{35}$  as a fraction in lowest terms.
7. Between which two consecutive integers is  $\sqrt{150}$ ?
8. What is x if  $(4^3)(8^4) = 2^x$ ?
9. What is x:  $2(3x - 4) = -5(2 - 6x)$ ?
10. What is x if  $\frac{2}{3}x - 2 = 5\frac{1}{3}$ ?
11. If  $y = 2x - 3$ , for what value of x will  $y = 31$ ?
12. Jerry is 2 years older than Steve and is 3 years older than Mary. If the sum of their ages is 37, how old is Jerry?
13. What are the new coordinates when the point  $(-3, -5)$  is moved seven units to the right and eight units up?
14. What are the new coordinates when point the  $(6, 8)$  is reflected about the y-axis?
15. What are the new coordinates when point the  $(1, 5)$  is rotated  $180^\circ$  counterclockwise about the origin?
16. In triangle ABC,  $AB = 8$ ,  $BC = 4$ , and  $CA = 6$ . Triangle MNP is similar to triangle ABC. If the shortest leg of triangle MNP is 8, what is the perimeter of triangle MNP?
17. The angles of a triangle have degree measures x,  $2x$ , and  $3x$ . What is the degree measure of the largest angle of the triangle?
18. What is the largest degree measure of a triangle whose sides have lengths 5, 12, and 13?
19. Simplify:  $\frac{x^3y^5z^4}{x^2y^2z^3}$ .
20. Find the product:  $(x^5y^4z^9)(x^{11}y^3z^2)$ .
21. Find the quotient:  $\frac{10^2}{\frac{1}{10^3}}$
22. Express in scientific notation form:  $(5.2 \times 10^7)(2.1 \times 10^8)$ .
23. Find the distance between  $(-1, -3)$  and  $(2, -1)$ .

24. The volume of a cylinder is  $63\pi$  cubic units. If the diameter of its base is 3 units, how many units is its height?

25. What is the sum of the next two terms of this sequence?  
1, 2, 4, 7, 11, 16, \_\_, \_\_, ...

26. What is the y-value of the point on the line passing through (2, 3) and (5, 21) whose x-value is 20?

27. What is AB? (AE=10, BD=5 and BC=6)



28. The degree measure of angle K is 17. What is the degree measure of angle M if angle M and angle K are complementary angles?

29. 132 is what percent of 150?

30.  $26\%$  of 175 = ?

31. A triangle has sides of lengths  $\frac{x}{2}$ ,  $x$ , and  $x$ . What is the length of the shortest side if the perimeter of the triangle is 10?

32. A cap normally priced at \$10.00 is on sale at 25% off. What is the sale price of the cap?

33. What is the smallest number whose prime factors are 3, 5, and 7?

34. What is the mean of the six smallest positive odd integers?

35. What is the value of  $x$  if the ratio of  $x$  minus one to  $x$  plus two is equal to the ratio of  $x$  minus three to  $x$  plus seven?

36. What is the least common multiple of 24 and 36?

37. What is the sum of the integers strictly between -44 and 48?

38. If  $a$  is negative three, in which quadrant of the Cartesian Coordinate Plane is the point whose first coordinate is five plus two  $a$  and whose second coordinate is three plus two  $a$ ?