Math Power

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Name: (First)_____(Last)_____

School: _____ Grade:_____

Numbers

1. 30 is what percent of 40?

2. 160% of what number is 144?

3. What percent of 22 is 88?

4. 17% of what is 51?

5. $\frac{4}{5}$ of 75

6. 50% of what number is 10?

7. 50% of 10

8. $\frac{1}{2}$% of 1000

9. What is 85% of 140?

10. 85% of what number is 17?

GT Integrated Review

11. 1 lb = 16 oz

    60 oz = _____ lb (in fractions)

12. $\frac{3+\frac{1}{2}}{2-\frac{1}{3}} =$

13. .18 ÷ 20 =

14. -24 ÷ (6 × -2) =

15. Mr. Van Dyke sold two cars costing $12,000 each. If he makes 8% profit from each car, what is the total profit he makes?

16. 100^2 =

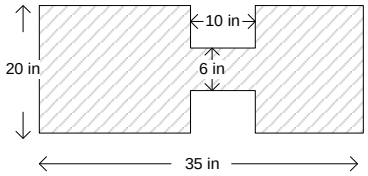
17. 4 - (5 - 10) =

18. A man bought a set of furniture listed at $2,000. He received a discount of 5% and then paid a 3% sales tax on the selling price. Find the sales tax.

19. Reduce your fraction whenever possible.

$$36 \times \frac{1}{30} \times \frac{5}{9} \times 12 =$$

20. Find the area of the shaded region.



21. If a trail mix contains $\frac{1}{3}$ cup of sunflower seeds in every 4 ounces of mix, how many cups of sunflower seeds are in three 8-ounce bags of this mix?

22. Solve:

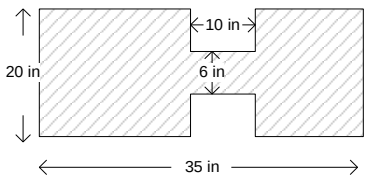
$3x - 13 = -\frac{1}{2}x + 1$

23. A carton of twelve cans of juice costs $3.60, while a carton of six cans costs $2.40. How much can you save per can if you buy the carton of twelve?

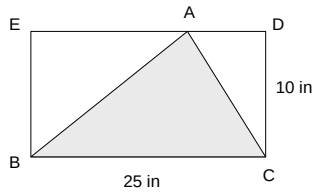
24. Find the least common denominator Add or and rename the resultant fraction appropriately. Reduce it to the lowest terms.

$$\begin{array}{r} 10 \\ -\ 6\frac{5}{12} \\ \hline \end{array}$$

20. Find the area of the shaded region.

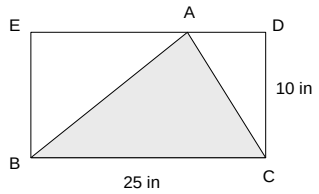


25. BCDE is a rectangle with the dimensions as specified below. Find the area of the ΔABC.



(Hint: It does not matter where A is positioned on DE.)

25. BCDE is a rectangle with the dimensions as specified below. Find the area of the ΔABC.



(Hint: It does not matter where A is positioned on DE.)

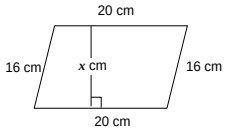
26. $\sqrt{\sqrt{16}}=$

27. $4^5 \div 2^3 = 2^{\square}$
$\square =$ _____

28. $\frac{4}{5} \div \frac{5}{6} \div \frac{7}{5} =$

29. $(1 - \frac{1}{2})(1 - \frac{1}{3})(1 - \frac{1}{4}) \ldots (1 - \frac{1}{10}) =$

30. The area of parallelogram is 300 cm^2. Find the value of x, the height to the longer side.



GT7 Integrated Review

31. Alex bought a motorcycle for $4,125. If the value of the vehicle decreases by 20% each year, what is the value of his motorcycle after two years?

32. Solve the equation for x:
$4(x - 1) + 5(x + 2) = 3(x - 8)$

33. $\sqrt{3} \times \sqrt{75} =$

34. Express in simplest form the following ratio:
15 hours to 3 days.

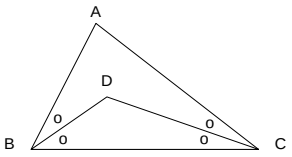
35. Ms. Sanchez drove 198 miles in 5 hours and 30 minutes. What was her average speed in miles per hour?

36. If 40 people can complete a project within 26 days, what percent increase in the staff is needed if the project needs to be done within 20 days?

37. Write $\frac{1}{3}$ in precise percent.

38. Solve $\sqrt{2x-0.3}= 0.4$

39. BD bisects (divides evenly) ∠ABC (reads angle ABC). DC bisects ∠BCA. Given ∠BDC = 130°. What is the angle measure of ∠A?

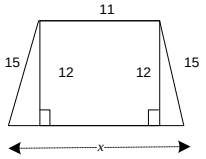


40. If Rosa spent $980 on a trip, and saved 30% of her total savings, how much money did she have originally?

41. Kenny is driving 50 miles per hour. How many hours and minutes would it take him to drive 360 miles?

42. If 4 times a number increased by 2 equals 30, what is the number?

43. Find the area of the trapezoid below.



44. Owen spent $660 during a 12-day vacation. If $60 was spent for automobile expenses, what were the daily expenses for other items?

45. Find the area of the shaded region. (Express your answer in π.)

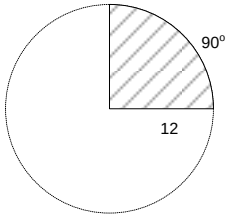
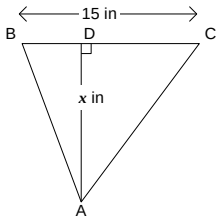


Figure is not drawn to scale.

46. The triangle below has an area of 90 in^2. Find the height of the triangle.



47. $3^{\square} \times 5^3 = 15^3$
$\square$ = _____

48. -0.7×-0.8×-0.5 =

49. $(1 - \frac{1}{3} - \frac{1}{6}) \div \frac{1}{4}$ =

50. What is the distance from Point P$(-8, 6)$ to the origin?

Exam Review

51. Solve the quadratic equation:
$(x - 3.6)^2 = 36$

52. The price of a $11 USB memory stick will increase by 10%. How much would it cost to purchase 11 USB sticks at the new price?

53. $3.2 \div \frac{2}{3} \times 2\frac{1}{3}$ =

54. Express this in percent: 17 of 250.

55. $2\times(-3)\times(-4)\times\frac{1}{8}$ =

56. $(p^{-2})^4(p^3)^3$ =

57. $(-x)^3(x)(x^2)$ =

58. $(-y)(-y)^2(-y)^3(-y)^4(-y)^5$ =

59. $\sqrt{6.4 \times 10^{17}}$ = _____ (in scientific notation)

60. $\sqrt[3]{6.4 \times 10^{64}}$= _____ (in scientific notation)

61. If x - 3y - 6 = $\frac{1}{3}$, what is the value of 3x - 9y?

62. At 40 miles per hour, how many minutes will it take to travel 18 miles?

63. Three chains, each 14 feet in length, are linked end to end. Two longer chains of equal length are added to make a total length of 100 feet. What is the length of one of the longer chains?

64. 15% of students prefer the color red, 25% prefer blue, and 45% prefer black. If 360 students prefer red, how many prefer blue?

65. A retailer sold a pair of Nike Shock for $180. If he made a 50% profit, how much did he buy each pair?

66. After Michael gave 110 baseball cards to Sally and 75 to Heidi, he had 315 left. What percent of his cards did Michael give away?

67. During a 30% off sale, Tom bought a pair of trousers for $35. What was the original price of the trousers?

68. What is the measure of an interior angle of a regular pentagon?

69. It takes Jon 1 hr 50 min to jog 8 miles from his home to the park. If it takes him 2 hr 10 min to jog back home, what is his average speed?

70. Amy runs 12 yards in s seconds. What would her rate be, in yards per second, if she ran twice as far in 10 more seconds?

Answer Key

1. $30\div40 = 0.75 = 75\%$
2. $144\div160\% = 144\div1.6 = 90$
3. 400%
4. 300
5. $\frac{4}{5}\times75 = 60$
6. 20
7. 5
8. 5
9. $140\times85\% = 119$
10. $17\div85\% = 20$
11. $\frac{60}{16} = \frac{15}{4} = 3\frac{3}{4}$ (lb)
12. $\frac{21}{10}$or $2\frac{1}{10}$
13. $.18\div20 = .009$
14. 2
15. $8\%\times12{,}000 = 8\times120 = 960$
    $960\times2 =$ \$1,920
16. 10,000
17. 9
18. $2{,}000\times0.95 = 1{,}900$
    $1{,}900\times0.03 =$ \$57.00
19. 8
20. $20\times(15+10) + 10\times6 = 560$ in^2
21. $(3\times8/4)\times\frac{1}{3} =$ 2 (cups)
22. $3x - 13 = -\frac{1}{2}x + 1$
    $3\frac{1}{2}x = 14$
    $x = 4$
23. $3.60\div12=0.3$
    $2.40\div6= 0.4$
    $0.4 - 0.3 =$ \$0.10 or 10¢
24. $3\frac{7}{12}$
25. $\frac{1}{2}(25)(10) = 125$ in^2
26. 2
27. $2^{10}\div2^3 = 2^7$
28. $\frac{24}{35}$
29. $\frac{1}{10}$
30. $300\div20 = 15$
31. The value after the first depreciation is
    $\$4{,}125\times(1\text{-}20\%) = \$3{,}300$
    The value after the second year depreciation is
    $3{,}300\times(1\text{-}20\%) =$ \$2,640
32. $4(x - 1) + 5(x + 2) = 3(x - 8)$
    $4x - 4 + 5x + 10 = 3x - 24$
    $9x + 6 = 3x - 24$
    $6x = -30$
    $x = -5$
33. $\sqrt{3\times3\times25} = 15$
34. 15:72 = 5:24
35. $\frac{198}{5\frac{1}{2}} = \frac{198}{5.5} = 36$ miles per hour
36. $40\times26 = 20\times52$
    $52 - 40 = 12$
    $12\div40 =$ 30%
37. $\frac{1}{3} = 0.33\frac{1}{3} = 33\frac{1}{3}\%$
38. $2x - 0.3 = 0.16$
    $2x = 0.46$
    $x = 0.23$
39. 80°
40. $980\div7\times3 =$ \$420
41. $T = D/S = 360/50 = 7.2$ hr = 7 hr and 12 min
42. Let's use x for the number to be found. According to the statement, we have
    $4x + 2 = 30$
    $\Rightarrow 4x = 28$
    $\Rightarrow x = 7$
43. $x = 9\times2 + 11 = 29$
    $\frac{1}{2}\times12\times(29 + 11) =$ 240
44. $660 - 60 = 600$
    $600 \div 12 =$ \$50.00
45. $\frac{1}{4}(144\pi) = 36\pi$
46. $\frac{1}{2}($12$\times15) = 90$
    or
    $90\times2\div15 =$ 12
47. 3
48. -0.28
49. $\frac{1}{2}\times4 = 2$
50. 10
51. $(x - 3.6)^2 = 6^2$
    $x = 3.6 \pm 6 = -2.4$ or 9.6
52. $11\times1.1\times11 = \$133.10$
53. 11.2
54. $17\div250=0.068 =$ 6.8%
55. $2\times(-3)\times(-4)\times\frac{1}{8} = 3$
56. p
57. $-x^6$

58. $(-y)(-y)^2(-y)^3(-y)^4(-y)^5 = \boxed{-y^{15}}$

59. 8×10^8

60. 4×10^{21}

61. $x - 3y - 6 = \frac{1}{3}$
$x - 3y = 6\frac{1}{3}$
$3x - 9y = 3(x - 3y) = \boxed{19}$

62. $\frac{18}{40}$=0.45 hour = 0.45×60 min = $\boxed{27 \text{ min}}$

63. $\frac{1}{2}(100 - 3\times14) = \boxed{29}$

64. 15% : 25% = 3 : 5 = 360 : $\boxed{600}$

65. 180÷1.5 = $\boxed{\$120}$

66. 110 + 75 + 315 = 500
185÷500 = $\boxed{37\%}$

67. Let x be the original price, then we have
$0.7x = 35$
$x = 35\div0.7 = \boxed{\$50}$

68. $(5 - 2)\times180° = 540$
$540°\div5 = 108°$

69. 2×8 = 16
1 hr 50 min + 2 hr 10 min = 4 hr
16÷ 4 = $\boxed{4 \text{ mph}}$

70. The new distance becomes 24, the new speed becomes s+10. So, the new speed = $\frac{\text{distance}}{\text{travel time}}$ = $\boxed{\frac{24}{s+10}}$.