

Math Power

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Name: (First)_____ (Last)_____

School: _____ Grade: _____

Signed Numbers

- $-(-2) = 2$
- $3 - (-2) = 3 + 2 = 5$
- $2 \times -3 = -6$
- $-2 \times -3 = 6$
- $\frac{-2}{-3} = \frac{2}{3}$
- $\frac{-2}{3} = \frac{2}{-3} = -\frac{2}{3}$

4. $(-8) - (-5) =$

5. $(9)(-4) =$

1. $(-5) + 7 =$

6. $9 \times (-8) - (-7) =$

2. $6 - (-9) - 5 =$

7. $960 \times -\left(\frac{1}{8}\right)^2 =$

3. $12 + 5 + (-8) + 20 + (-16) =$

8. $\frac{1}{-10} \times \frac{-5}{6} =$

15. $(-0.5)^{-1} =$

9. $-225 \times \frac{-4}{9} \times \frac{1}{5^2} =$

16. $(-1/2)^{-1} =$

10. $-63 \times \frac{-4}{9} =$

17. $(-1.25)^{-1} =$

Reciprocal

Negative power means reciprocal.

E.g. $10^{-1} = \frac{1}{10} = 0.1$

$10^{-2} = \frac{1}{100} = 0.01$

18. $(-0.125)^{-1} =$

(Hint: $0.125 = \frac{1}{8}$)

11. $(-0.2)^{-1} =$

19. $(-2.5)^{-1} =$

12. $(-1/5)^{-1} =$

20. $(-12.5)^{-1} =$

13. $(-0.25)^{-1} =$

21. $(-25)^{-1} =$

14. $(-1/4)^{-1} =$

22. $(-50)^{-1} =$

Squaring a Number with Double prefix

23. $(-2)^{-2} =$

31. Find the square of 24.

$24 = 20 + 4$

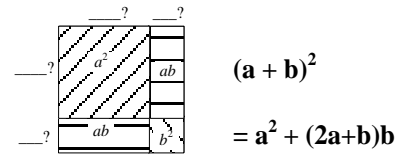
$24^2 = 20^2 + 44 \times 4$

_____ + _____ = _____

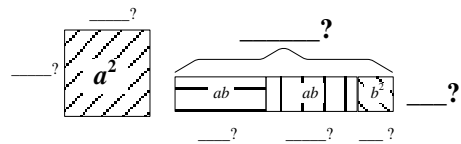
24. $(-4)^{-2} =$

25. $(-5)^{-2} =$

32. Find the square of 246.



26. $(-10)^{-2} =$



27. $(-0.1)^{-2} =$

$246 = 240 + 6$

$246^2 = 240^2 + 486 \times 6$

_____ + _____ = _____

28. $(-0.2)^{-2} =$

33. Find the square of 44.

29. $(-\frac{1}{5})^{-2} =$

34. Find the square of 54.

30. $(-0.25)^{-2} =$
 (Hint: $0.25 = \frac{1}{4}$)

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35. Find the square of 16.

42. Mr. Thomas teaches a class of 20 pupils. 60% of them are boys. How many girls are there?

36. Find the square of 26.

$$26 = 30 + (-4)$$

$$26^2 = 30^2 - 54 \times 6$$

$$\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

43. If $3\frac{5}{9}$ yards of ribbon are shared equally among 8 girls, how many inches of ribbon will each girl get?
(Hint: 1 yd = 3 ft, 1 ft = 12 in.)

37. Find the square of 36.

44. A hamburger recipe calls for $\frac{1}{8}$ pound of meat. How many hamburgers can you make with 8 ounces of meat?
(Hint: 1 pound = 16 ounces)

38. Find the square of 46.

45. The distance from your home to a town is 85 miles. You have traveled $\frac{4}{5}$ of the way. How many miles have you traveled?

39. Find the square of 56.

46. There are 1 dozen eggs. $\frac{2}{3}$ of them are used. How many eggs are left?

40. Find the square of 16.

47. Mrs. Taylor made 35 cookies. $2\frac{1}{4}$ dozen were eaten. How many were left?

Math Reflex 7

41. The hourly rate is \$8.00. Karen works 7.5 hours each day and 4 days a week. How much pay would she receive in 3 weeks?

48. You had \$8.00 and spent $\frac{1}{4}$ for a toy. How much (in dollars) was left?

53. $2^4 =$

49. Nancy saved some money. After spending $\frac{5}{6}$ of her money on books, she still had \$12 left. How much money did Nancy have originally?

54. $5^4 =$

50. There are 5,280 feet in a mile. Christopher has walked $\frac{5}{8}$ mile. How many more feet must Christopher walk a mile?

55. $20^4 =$

56. $(9/10)^{-2} =$

Negative Powers (-4)

- $3^{-1} = \frac{1}{3}$
- $3^{-2} = \frac{1}{9}$
- $\left(\frac{2}{3}\right)^2 = \frac{2^2}{3^2} = \frac{4}{9}$
- $\left(\frac{2}{3}\right)^{-2} = \left(\frac{3}{2}\right)^2 = \frac{9}{4}$

57. $(2/5)^{-4} =$

58. $10^{-4} =$

51. $(1/5)^4 =$

59. $4^{-4} =$

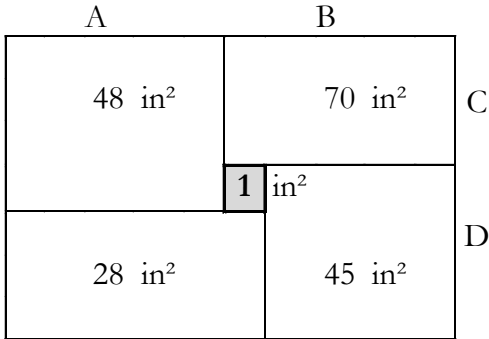
52. $(4/5)^4 =$

60. $(1/2)^{-4} =$

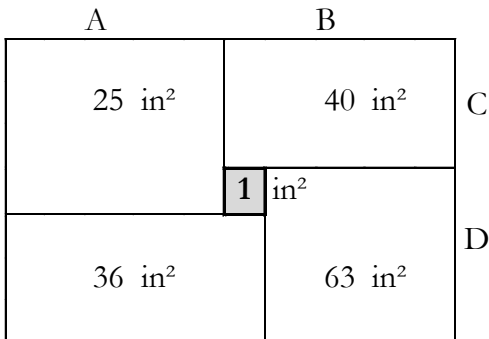
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Solving Puzzles

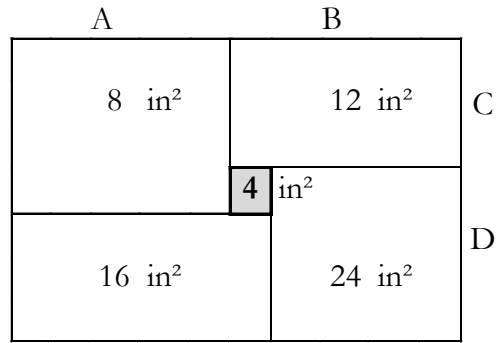
Not drawn to scale, a rectangle is divided into 4 rectangles and one central square as shaded, with the specified areas. Solve puzzles by finding the value of each symbol (A, B, C, and D) in whole number of inches.



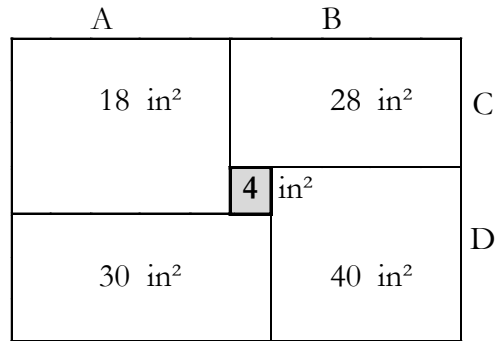
61.



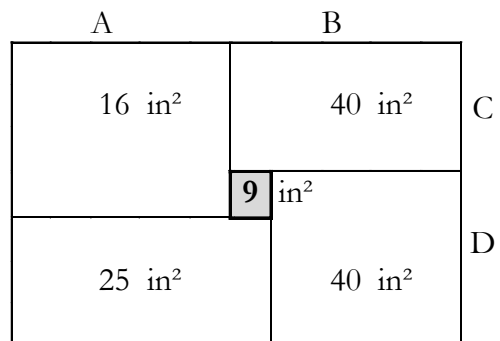
62.



63.



64.



65.

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Review

66. $(-.2)^3 =$

74. Solve the following linear equation :

$$3x + 1 = 21$$

67. $(27 \times 31 \times 35 \times 39 \times 43) \div (43 \times 39 \times 35 \times 31) =$

75. $44.8 \div 7\% =$

68. $\sqrt{144\%} =$ ____ %

76. Reduce your fraction whenever possible.

$$\frac{7}{10} \\ - \frac{1}{6} \\ \hline$$

69. $.025 \times 0.5 =$

77. $0.3^3 =$ (decimal)

70. $0.12^2 =$

78. $5^8 = 25^{\square}$

71. $1\frac{3}{7} \times 2\frac{4}{5} =$

Question set [79 - 80]

Susie saved \$400. The price of a stereo is 60% of what she has.

72. $-2(-24) - 3(30) =$

79. What is the price of the stereo set?

73. $-3 + (-2 - 5) =$

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80. How much was left after she bought the stereo?

85. If a \$120-coat was sold for \$96, what was the percent discount on the coat?

81. 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 sale price. Find the sales tax.

Multiplying Polynomials

86. $(x - 8)(x + 1) =$

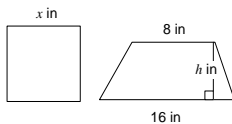
87. $(3x + 4)(x + 4) =$

82. A solar calculator cost \$60 this year. The price increased 20% from this year. What was the price last year?

88. $(3x + 2)(3x - 5) =$

83. Each side of the square is x inches long. The area of the square is equal to the area of a trapezoid ($< 50 \text{ in}^2$). If x and h are both integers, what is the perimeter of the square?

89. $(2x + 5)(3x + 1) =$



90. $(3x + 4)(4x + 1) =$

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

$$\underline{\underline{- 2\frac{1}{12}}}$$

Answer Key

1. 2
2. 10
3. 13
4. -3
5. -36
6. -65
7. -15
8. $\frac{1}{12}$
9. 4
10. 28
11. -5
12. -5
13. -4
14. -4
15. -2
16. -2
17. -0.8
18. -8
19. -0.4
20. -0.08
21. -0.04
22. -0.02
23. 0.25
24. 0.0625
25. 0.04
26. 0.01
27. 100
28. 25
29. 25
30. 16
31. 576
32. $57,600 + 2,916$
 $= 60,516$
33. 1936
34. 2916
35. 256
36. 676
37. 1296
38. 2116
39. 3136
40. 256
41. $8.00 \times 7.5 \times 4 \times 3 = 720$
42. $20 \times (1 - 60\%) = 8$
43. $(36 \times 3 + 36/9 \times 5)/8 = 16$
44. $8 / ((16/8) \times 1) = 4$
45. $85/5 \times 4 = 68$
46. $1 \times 12 \times (1 - 2/3) = 4$
47. $35 - 12 \times (2 + 1/4) = 8$
48. $8 \times (1 - 1/4) = 6$
49. $12 / (1 - 5/6) = 72$
50. $5280 \times (1 - 5/8) = 1980$
51. $1/625$
52. $256/625$
53. 16
54. 625
55. 160000
56. $100/81$
57. $625/16$
58. 0.0001
59. $1/256$
60. 16
61. 6 in (A) & 10 in (B) & 7 in (C) & 5 in (D)
62. 5 in (A) & 10 in (B) & 4 in (C) & 7 in (D)
63. 2 in (A) & 6 in (B) & 2 in (C) & 6 in (D)
64. 3 in (A) & 7 in (B) & 4 in (C) & 8 in (D)
65. 2 in (A) & 8 in (B) & 5 in (C) & 8 in (D)
66. -0.008
67. 27
68. 120
69. .0125
70. 0.0144
71. 4
72. -42
73. -10
74. $x = \frac{20}{3} = 20/3$
75. 640
76. $\frac{\frac{21}{30} - \frac{5}{5}}{\frac{16}{30} - \frac{8}{15}} = 8/15$
77. 0.027
78. $5^8 = (5^2)^4 = 25^4$
 $\square = 4$
79. $400 \times 60\% = \$240.00$

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80. $400 - 240 = \$160.00$

81. $2,000 \times 0.95 = 1,900$
 $1,900 \times 0.03 = \$57.00$

82. $60 \div 1.2 = 50$

83. $\frac{1}{2}(8 + 16) \times h = 12 \times h = x^2$
 $h = 3$
 $x = 6$
 $4 \times 6 = 24$

84. $3\frac{11}{12} = 3 \frac{11}{12}$

85. $(120 - 96) \div 120 = .2 = 20\%$

86. $x^2 - 7x - 8$

87. $3x^2 + 16x + 16$

88. $9x^2 - 9x - 10$

89. $6x^2 + 17x + 5$

90. $12x^2 + 19x + 4$