

This puzzle originally consisted of 24 "equations" by Will Shortz, printed in the May-June 1981 issue of Games magazine, with an acknowledgment to Morgan Worthy. Games ran several follow-ups in subsequent issues, and reported that people kept resubmitting the puzzle to them, sometimes as original work! Many people have now added to the list of equations. The 24 original ones are starred (\*) below.

0 = D. C. at which W. F.  
0 = the H.  
0 = T.  
1 = E. on a C.  
1 = G. L. for M.  
1 = K. K. on the E. S. B.  
1 = S. C. in D. P.  
1 = S. S.  
1 = S. S. for a M.  
1 = T. that O. K.  
1 = W. on a U.  
1 = if by L.  
1 = the L. N.  
2 = B. G.  
2 = C. B. as B. as O.  
2 = C. in the T. by C. D.  
2 = E. of E.  
2 = H. in a W.  
2 = H. of C.  
2 = L. in the H. B.  
2 = N. in a D.  
2 = O. in a D. P.  
2 = P. J. P.  
2 = P. in a B.  
2 = P. in a P.  
2 = Q. in a H.-D.  
2 = S. of a L.'s T.  
2 = T. in the W. T. C.  
2 = T. the P. A. R.  
2 = W. S. in "C."  
2 = W. that D.'t M. a R.  
2 = if by S.  
3 = B. M. (S. H. T. R.!)  
3 = B. in "G."  
3 = B. in "L. of the R."  
3 = B. in the H. E.  
3 = B. of the U. S. G.  
3 = D. for J. in the B. of the W.  
3 = D. of the C.  
3 = F. in a Y.  
3 = L. P.  
3 = L. on a T.  
3 = M. and a B.  
3 = O. K. C.'s F.  
3 = P. in a B. S.  
3 = P. in a H. G.  
3 = P. of an I.  
3 = R. in a C.  
3 = S. and Y.'re O.  
3 = S. on C.' F. V.  
3 = S. in a T.  
3 = S. to the W.  
3 = W. M. at B.  
3 = W. in "M."  
3 = W. on a T.

3 = on a M.  
4 = B. in a W.  
4 = C. in the H. H.  
4 = G. M. in C.  
4 = H. of the A.  
4 = I's in M.  
4 = L. in a D. W.  
4 = M. in a S.  
4 = M. of the B.  
4 = Q. in a F. G.  
4 = Q. in a G.  
4 = S's in M.  
4 = S. in a D. of C.  
4 = S. in a R.  
4 = S. in a S.  
4 = S. in a Y.  
4 = T. FDR E. P.  
4 = W. on a C.  
4 = Y. in an O.  
5 = B. in the T.  
5 = D. in a Z. C.  
5 = F. on a H.  
5 = G. L.  
5 = M. B. in "J. and the B."  
5 = M. in a C. R.  
5 = P. in a N.  
5 = S. in a P.  
5 = S. in the S. C.  
5 = T. on a F.  
5 = V. O. in the H. B.  
6 = D. of the C.  
6 = "B. C."  
6 = A. of the A.  
6 = D. of C.  
6 = H. D. of O. for R. C.  
6 = P. in a P.  
6 = P. in a P. T.  
6 = S. in a H.  
6 = T. Z. in the U. S.  
6 = W. of H. VIII  
6 = of O. and a H. D. of the O.  
7 = "P. of W."  
7 = A. of M.  
7 = C. in a R.  
7 = D. in "S. W."  
7 = D. of S. from K. B.  
7 = H. of R.  
7 = K. of F. in H. P.  
7 = P. of E.  
7 = S. of S. the S.  
7 = W. of the A. W.  
8 = C. in a M.  
8 = D. in H.  
8 = K. H. of E.  
8 = L. on a S.  
8 = L. on an O.  
8 = S. in a O.  
8 = S. on a S. S.  
8 = S.'s R.  
8 = G. T. in a L. B. C.  
9 = C. of H. in the "D. C."  
9 = D. in a Z. C., with the S. C.  
9 = G. M.

9 = I. in a B. G.  
9 = J. on the U. S. S. C.  
9 = L. of a C.  
9 = M. in a H. B.'s G. P.  
9 = P. in the S. S.  
9 = S. by B.  
10 = A. in the B. of R.  
10 = C. G. to M.  
10 = F. in B.  
10 = L. I. B.  
10 = P. in C.  
10 = Y. in a D.  
11 = F. in a C.  
11 = P. on a C. T.  
11 = P. on a F. T.  
11 = S. in the C.  
12 = A. at the L. S.  
12 = C. of A. R.  
12 = D. of C.  
12 = D. of J.  
12 = L. of H.  
12 = S. of the Z.  
12 = T. of I.  
13 = a B.'s D.  
13 = O. C.  
13 = S. on the A. F.  
14 = D. in a F.  
14 = L. in a S.  
14 = P. in W. W.'s P.  
15 = M. of F. per P., A. to A. W.  
15 = M. on a D. M.'s C.  
16 = O. in a P.  
16 = O. of M.  
17 = S. in a H.  
17 = P. that D. N. and S. V.  
18 = H. on a G. C.  
18 = I. in a C.  
19 = G. S. for the V. P.  
20 = C. in a P.  
20 = Y. S. by R. V. W.  
21 = G. S. for the P.  
22 = C.  
23 = P. on a G. J.  
24 = B. B. in a P.  
24 = B. B. to a C.  
24 = D. P. to the I. for M. I.  
24 = H. in a D.  
24 = S. Z. of I. T.  
25 = Y. of M. for a S. A.  
25 = P. in a Q.  
26 = L. of the A.  
27 = D. W. W. by G. G.  
27 = A. to the U. S. C.  
28 = D. in F.  
29 = D. in F. in a L. Y.  
30 = D. H. S.  
30 = D. in J.  
30 = P. of S. G. to J.  
31 = D. in O.  
32 = D. F. at which W. F.  
36 = I. on a Y. S.  
36 = R. M.  
39 = L. in M.' L.

40 = D. and N. of the G. F.  
40 = D. in L.  
40 = Y. in the D. for I.  
43 = B. in E. C. of N.  
45 = D. in a O.  
46 = C. in a H. C.  
47 = P. P. in E.'s E.  
48 = C. in a P. D.  
49 = R. A. in a R.  
50 = S. in the U.  
50 = W. to L. Y. L.  
52 = W. in a Y.  
52 = C. in a D.  
54 = C. in a D. (with the J.)  
57 = H. V.  
60 = S. in a M.  
61 = H. R. H. by R. M. in O. S.  
64 = S. on a C.  
64 = Y. O. W. I H. Y. W. S. N. M.  
66 = B. in the K. J. B.  
70 = D. of C.  
75 = Y. of M. for the D. A.  
76 = T. L. the B. P.  
78 = C. in a T. D.  
80 = C. in a M.  
80 = D. to G. A. the W.  
87 = F. S. and S. Y.  
88 = C. in the S.  
88 = P. K.  
90 = D. in a R. A.  
95 = M. L.'s T.  
96 = T., by ?  
99 = B. of B. on a W.  
100 = C. in a D.  
100 = D. C. at which W. B.  
100 = Y. in a F. F.  
101 = D.  
101 = a S. M. L.  
102 = F. in the E. S. B.  
116 = Y. in the H. Y.'s W.  
144 = U. in a G.  
150 = P. in the B.  
180 = D. to R. D.  
200 = D. for P. G. in M.  
200 = M. in a C.  
206 = B. in the H. B.  
235 = I. of U. in the A. B.  
300 = B. in the T. of C.  
365 = D. in a Y.  
366 = D. in a L. Y.  
432 = P. in a H.  
435 = S. in the H. of R.  
451 = D. F. at which B. B.  
500 = F. C.  
500 = M. in the I. F. H.  
500 = S. in a R.  
666 = N. of the B. in the B. of R.  
707 = Y. of C.  
755 = H. runs H. by H. A.  
800 = W. in V.  
880 = N. of M. S. of O. F.  
1000 = I. in N. Y.  
1000 = P. of L.

1000 = S. L. by the F. of H. of T.

1000 = W. that a P. is W.

1001 = A. N.

1440 = M. in a D.

1760 = Y. in a M.

5280 = F. in a M.

20000 = L. U. the S.

1,000,000 = D. Y. W. to be a \_\_\_ aire?

## Numbers Key

- 0 = D. C. at which W. F.  
(Degrees Centigrade at which Water Freezes)
- 0 = the H. (the Hero)
- 0 = T. (Tolerance)
- 1 = E. on a C. (Eye on a Cyclops)
- 1 = G. L. for M. (Giant Leap for Mankind)
- 1 = K. K. on the E. S. B. (King Kong on the Empire State Building)
- 1 = S. C. in D. P. (Single Calorie in Diet Pepsi)
- 1 = S. S. (Singular Sensation)
- 1 = S. S. for a M. (Small Step for a Man)
- 1 = T. that O. K. (Time that Opportunity Knocks)
- 1 = W. on a U. (Wheel on a Unicycle \*)
- 1 = if by L. (if by Land)
- 1 = the L. N. (the Loneliest Number)
- 2 = B. G. (Brothers Grimm)
- 2 = C. B. as B. as O. (Can Be as Bad as One)
- 2 = C. in the T. by C. D. (Cities in the Tale by Charles Dickens)
- 2 = E. of E. (Elizabeths of England)
- 2 = H. in a W. (Halves in a Whole)
- 2 = H. of C. (Houses of Congress)
- 2 = L. in the H. B. (Lungs in the Human Body)
- 2 = N. in a D. (Nickels in a Dime)
- 2 = O. in a D. P. (Outs in a Double Play)
- 2 = P. J. P. (Pope John Pauls)
- 2 = P. in a B. (Pieces in a Bikini)
- 2 = P. in a P. (Peas in a Pod)
- 2 = Q. in a H.-D. (Quarters in a Half-Dollar)
- 2 = S. of a L.'s T. (Shakes of a Lamb's Tail)
- 2 = T. in the W. T. C. (Towers in the World Trade Center)
- 2 = T. the P. A. R. (Times the Postman Always Rings)
- 2 = W. S. in "C." (Wicked Stepsisters in "Cinderella")
- 2 = W. that D.'t M. a R. (Wrongs that Don't Make a Right)
- 2 = if by S. (if by Sea)
- 3 = B. M. (S. H. T. R.!) (Blind Mice, See How They Run! \*)
- 3 = B. in "G." (Bears in "Goldilocks")
- 3 = B. in "L. of the R." (Books in "Lord of the Rings")
- 3 = B. in the H. E. (Bones in the Human Ear)
- 3 = B. of the U. S. G. (Branches of the United States Government)
- 3 = D. for J. in the B. of the W. (Days for Jonah in the Belly of the Whale)
- 3 = D. of the C. (Days of the Condor -- movie)
- 3 = F. in a Y. (Feet in a Yard)
- 3 = L. P. (Little Pigs)
- 3 = L. on a T. (Legs on a Tripod)
- 3 = M. and a B. (Men and a Baby)
- 3 = O. K. C.'s F. (Old King Cole's Fiddlers)
- 3 = P. in a B. S. (Pieces in a Business Suit)
- 3 = P. in a H. G. (Periods in a Hockey Game)
- 3 = P. of an I. (Parts of an Insect)
- 3 = R. in a C. (Rings in a Circus)
- 3 = S. and Y.'re O. (Strikes and You're Out)
- 3 = S. on C.' F. V. (Ships on Columbus' First Voyage)
- 3 = S. in a T. (Sides in a Triangle)
- 3 = S. to the W. (Sheets to the Wind)
- 3 = W. M. at B. (Wise Men at Bethlehem)
- 3 = W. in "M." (Witches in "Macbeth")
- 3 = W. on a T. (Wheels on a Tricycle)
- 3 = on a M. (on a March)
- 4 = B. in a W. (Balls in a Walk)
- 4 = C. in the H. H. (Chambers in the Human Heart)
- 4 = G. M. in C. (Gang Members in China)

4 = H. of the A. (Horsemen of the Apocalypse)  
 4 = I's in M. (I's in Mississippi)  
 4 = L. in a D. W. (Letters in a Dirty Word)  
 4 = M. in a S. (Movements in a Symphony)  
 4 = M. of the B. (Members of the Beatles)  
 4 = Q. in a F. G. (Quarters in a Football Game)  
 4 = Q. in a G. (Quarts in a Gallon \*)  
 4 = S's in M. (S's in Mississippi)  
 4 = S. in a D. of C. (Suits in a Deck of Cards)  
 4 = S. in a R. (Sides in a Rectangle)  
 4 = S. in a S. (Sides in a Square)  
 4 = S. in a Y. (Seasons in a Year)  
 4 = T. FDR E. P. (Terms FDR Elected President)  
 4 = W. on a C. (Wheels on a Car)  
 4 = Y. in an O. (Years in an Olympiad)  
 5 = B. in the T. (Books in the Torah)  
 5 = D. in a Z. C. (Digits in a Zip Code \*)  
 5 = F. on a H. (Fingers on a Hand)  
 5 = G. L. (Great Lakes)  
 5 = M. B. in "J. and the B." (Magic Beans in "Jack and the Beanstalk")  
 5 = M. in a C. R. (Miles in a Camptown Racetrack)  
 5 = P. in a N. (Pennies in a Nickel)  
 5 = S. in a P. (Sides in a Pentagon)  
 5 = S. in the S. C. (Stars in the Southern Cross)  
 5 = T. on a F. (Toes on a Foot)  
 5 = V. O. in the H. B. (Vital Organs in the Human Body)  
 6 = D. of the C. (Days of the Condor -- book)  
 6 = "B. C." ("Brandenburg Concertos")  
 6 = A. of the A. (Avenue of the Americas)  
 6 = D. of C. (Days of Creation)  
 6 = H. D. of O. for R. C. (Holy Days of Obligation for Roman Catholics)  
 6 = P. in a P. (Pigs in a Poke)  
 6 = P. in a P. T. (Pockets in a Pool Table)  
 6 = S. in a H. (Sides in a Hexagon)  
 6 = T. Z. in the U. S. (Time Zones in the United States)  
 6 = W. of H. VIII (Wives of Henry VIII)  
 6 = of O. and a H. D. of the O. (of One and a Half Dozen of the Other)  
 7 = "P. of W." ("Pillars of Wisdom")  
 7 = A. of M. (Ages of Man)  
 7 = C. in a R. (Colors in a Rainbow : ROYGBIV)  
 7 = D. of S. from K. B. (Seven Degrees of Separation from Kevin Bacon)  
 7 = D. in "S. W." (Dwarfs in "Snow White")  
 7 = H. of R. (Hills of Rome)  
 7 = K. of F. in H. P. (Kinds of Fruit in Hawaiian Punch)  
 7 = P. of E. (Plagues of Egypt)  
 7 = S. of S. the S. (Seas of Sinbad the Sailor)  
 7 = W. of the A. W. (Wonders of the Ancient World \*)  
 8 = C. in a M. (Candles in a Menorah)  
 8 = D. in H. (Days in Hanukkah)  
 8 = K. H. of E. (King Henrys of England)  
 8 = L. on a S. (Legs on a Spider)  
 8 = L. on an O. (Legs on an Octopus)  
 8 = S. in a O. (Sides in a Octagon)  
 8 = S. on a S. S. (Sides on a Stop Sign \*)  
 8 = S.'s R. (Santa's Reindeer)  
 8 = G. T. in a L. B. C. (Great Tomatoes in a Little Bitty Can)  
 9 = C. of H. in the "D. C." (Circle of Hell in the "Divine Comedy")  
 9 = D. in a Z. C., with the S. C. (Digits in a Zip Code, with the Street Code)  
 9 = G. M. (Greek Muses)  
 9 = I. in a B. G. (Innings in a Baseball Game)  
 9 = J. on the U. S. S. C. (Justices on the United States Supreme Court)  
 9 = L. of a C. (Lives of a Cat)  
 9 = M. in a H. B.'s G. P. (Months in a Human Baby's Gestation Period)

9 = P. in the S. S. (Planets in the Solar System \*)  
 9 = S. by B. (Symphonies by Beethoven)  
 10 = A. in the B. of R. (Amendments in the Bill of Rights)  
 10 = C. G. to M. (Commandments Given to Moses)  
 10 = F. in B. (Frames in Bowling)  
 10 = L. I. B. (Little Indian Boys)  
 10 = P. in C. (Provinces in Canada)  
 10 = Y. in a D. (Years in a Decade)  
 11 = F. in a C. (Fathoms in a Chain)  
 11 = P. on a C. T. (Players on a Cricket Team)  
 11 = P. on a F. T. (Players on a Football Team \*)  
 11 = S. in the C. (States in the Confederacy)  
 12 = A. at the L. S. (Apostles at the Last Supper)  
 12 = C. of A. R. (Caesars of Ancient Rome)  
 12 = D. of C. (Days of Christmas)  
 12 = D. of J. (Disciples of Jesus)  
 12 = L. of H. (Labors of Hercules)  
 12 = S. of the Z. (Signs of the Zodiac \*)  
 12 = T. of I. (Tribes of Israel)  
 13 = a B.'s D. (a Baker's Dozen)  
 13 = O. C. (Original Colonies)  
 13 = S. on the A. F. (Stripes on the American flag \*)  
 14 = D. in a F. (Days in a Fortnight)  
 14 = L. in a S. (Lines in a Sonnet)  
 14 = P. in W. W.'s P. (Points in Woodrow Wilson's Plan)  
 15 = M. of F. per P., A. to A. W.  
 (Minutes of Fame per Person, According to Andy Warhol)  
 15 = M. on a D. M.'s C. (Men on a Dead Man's Chest)  
 16 = O. in a P. (Ounces in a Pound)  
 16 = O. of M. (Orders of Mammals)  
 17 = S. in a H. (Syllables in a Haiku)  
 17 = P. that D. N. and S. V. (Parallel that Divided North and South Vietnam)  
 18 = H. on a G. C. (Holes on a Golf Course \*)  
 18 = I. in a C. (Inches in a Cubit)  
 19 = G. S. for the V. P. (Gun Salute for the Vice President)  
 20 = C. in a P. (Cigarettes in a Pack)  
 20 = Y. S. by R. V. W. (Years Slept by Rip Van Winkle)  
 21 = G. S. for the P. (Gun Salute for the President)  
 22 = C. (Catch)  
 23 = P. on a G. J. (People on a Grand Jury)  
 24 = B. B. in a P. (Black Birds Baked in a Pie)  
 24 = B. B. to a C. (Beer Bottles to a Case)  
 24 = D. P. to the I. for M. I. (Dollars Paid to the Indians for Manhattan Island)  
 24 = H. in a D. (Hours in a Day \*)  
 24 = S. Z. of I. T. (Standard Zones of International Time)  
 25 = Y. of M. for a S. A. (Years of Marriage for a Silver Anniversary)  
 25 = P. in a Q. (Pennies in a Quarter)  
 26 = L. of the A. (Letters of the Alphabet \*)  
 27 = D. W. W. by G. G. (Different Wigs Worn by Gregory Giggis)  
 27 = A. to the U. S. C. (Amendments to the United States Constitution)  
 28 = D. in F. (Days in February)  
 29 = D. in F. in a L. Y. (Days in February in a Leap Year \*)  
 30 = D. H. S. (Days Hath September)  
 30 = D. in J. (Days in June)  
 30 = P. of S. G. to J. (Pieces of Silver Given to Judas)  
 31 = D. in O. (Days in October)  
 32 = D. F. at which W. F. (Degrees Fahrenheit at which Water Freezes \*)  
 36 = I. on a Y. S. (Inches on a Yard Stick)  
 36 = R. M. (Righteous Men)  
 39 = L. in M.' L. (Lashes in Moses' Law)  
 40 = D. and N. of the G. F. (Days and Nights of the Great Flood \*)  
 40 = D. in L. (Days in Lent)  
 40 = Y. in the D. for I. (Years in the Desert for Israelites)



43 = B. in E. C. of N. (Beans in Each Cup of Nescafe)  
45 = D. in a O. (Degrees in an Octant)  
46 = C. in a H. C. (Chromosomes in a Human Cell)  
47 = P. P. in E.'s E. (Pythagorean Proposition in Euclid's Elements)  
48 = C. in a P. D. (Cards in a Pinochle Deck)  
49 = R. A. in a R. (Reasons All in a Row)  
50 = S. in the U. (States in the Union)  
50 = W. to L. Y. L. (Ways to Leave Your Lover)  
52 = W. in a Y. (Weeks in a Year)  
52 = C. in a D. (Cards in a Deck)  
54 = C. in a D. (with the J.) (Cards in a Deck with the Jokers \*)  
57 = H. V. (Heinz Varieties \*)  
60 = S. in a M. (Seconds in a Minute)  
61 = H. R. H. by R. M. in O. S. (Home Runs Hit by Roger Maris in One Season)  
64 = S. on a C. (Squares on a Chessboard \*)  
64 = Y. O. W. I H. Y. W. S. N. M. (Years Old When I Hope You Will Still Need Me)  
66 = B. in the K. J. B. (Books in the King James Bible)  
70 = D. of C. (Disciples of Christ)  
75 = Y. of M. for the D. A. (Years of Marriage for the Diamond Anniversary)  
76 = T. L. the B. P. (Trombones Led the Big Parade)  
78 = C. in a T. D. (Cards in a Tarot Deck)  
80 = C. in a M. (Chains in a Mile)  
80 = D. to G. A. the W. (Days to Go Around the World)  
87 = F. S. and S. Y. (Four Score and Seven Years)  
88 = C. in the S. (Constellations in the Sky)  
88 = P. K. (Piano Keys \*)  
90 = D. in a R. A. (Degrees in a Right Angle \*)  
95 = M. L.'s T. (Martin Luther's Theses)  
96 = T., by ? (Tears, by ?)  
99 = B. of B. on a W. (Bottles of Beer on a Wall)  
100 = C. in a D. (Cents in a Dollar)  
100 = D. C. at which W. B. (Degrees Centigrade at which Water Boils)  
100 = Y. in a F. F. (Yards in a Football Field)  
101 = D. (Dalmatians)  
101 = a S. M. L. (a Silly Millimeter Longer)  
102 = F. in the E. S. B. (Floors in the Empire State Building)  
116 = Y. in the H. Y.'s W. (Years in the Hundred Year's War)  
144 = U. in a G. (Units in a Gross)  
150 = P. in the B. (Psalms in the Bible)  
180 = D. to R. D. (Degrees to Reverse Direction)  
200 = D. for P. G. in M. (Dollars for Passing Go in Monopoly \*)  
200 = M. in a C. (Milligrams in a Carat)  
206 = B. in the H. B. (Bones in the Human Body)  
235 = I. of U. in the A. B. (Isotope of Uranium in the Atomic Bomb)  
300 = B. in the T. of C. (Bees in the Tomb of Childeric)  
365 = D. in a Y. (Days in a Year)  
366 = D. in a L. Y. (Days in a Leap Year)  
432 = P. in a H. (Pints in a Hogshead)  
435 = S. in the H. of R. (Seats in the House of Representatives)  
451 = D. F. at which B. B. (Degrees Fahrenheit at which Books Burn)  
500 = F. C. (Fortune Companies)  
500 = M. in the I. F. H. (Miles in the Indianapolis Five Hundred)  
500 = S. in a R. (Sheets in a Ream)  
666 = N. of the B. in the B. of R. (Number of the Beast in the Book of Revelation)  
707 = Y. of C. (Year of Confusion)  
755 = H. runs H. by H. A. (Home runs Hit by Hank Aaron)  
800 = W. in V. (Warriors in Valhalla)  
880 = N. of M. S. of O. F. (Number of Magic Squares of Order Four)  
1000 = I. in N. Y. (Islands in New York)  
1000 = P. of L. (Points of Light)  
1000 = S. L. by the F. of H. of T. (Ships Launched by the Face of Helen of Troy)  
1000 = W. that a P. is W. (Words that a Picture is Worth \*)  
1001 = A. N. (Arabian Nights \*)

1440 = M. in a D. (Minutes in a Day)

1760 = Y. in a M. (Yards in a Mile)

5280 = F. in a M. (Feet in a Mile)

20000 = L. U. the S. (Leagues Under the Sea)

1,000,000 = D. Y. W. to be a \_\_ aire? (Do You Want to be a Millionaire?)