52.

Advanced Mathematics Bingo

Topic: Review of mathematics concepts through trigonometry

Level: Grades 11–12

Number of Players: Entire class or small group

Materials: Regular set of BINGO cards and the Advanced Mathematics call cards; each player will need 25 beans for covers

Procedure:

1. One student or the teacher is the caller. The caller shuffles the call cards and begins by reading the problem on the top card.
2. The players work the problem and cover the answer on their BINGO card, if it appears there.
3. The first person to cover 1 row, 1 column, or 1 diagonal calls out "bingo." Play stops so that the caller may check the player's card to see if the correct numbers were covered. If so, then that player is declared the winner of that game. If not, play resumes until someone again calls out "bingo."

   NOTE: the correct answers are given in the lower left-hand corner of the call cards.

Variations: BINGO will consist of row 1 and the middle column, forming a "T."

BINGO will consist of column 1, column 5, and the middle row, forming an "H."

BINGO will consist of column 1 and row 5, forming an "L."

BINGO will be a blackout—all squares covered. Blackout can be played from the beginning or as a continuation of another type of BINGO. If this option is used, be sure that the students do not clear their cards after the first BINGO.

B	I	N	G	O
●	●	●	●	●
9	21	●	49	66
7	23	●	60	70
13	18	●	59	74
11	29	●	53	72

B	I	N	G	O
●	17	33	47	●
●	21	37	49	●
●	●	●	●	●
●	18	39	59	●
●	29	44	53	●

B	I	N	G	O
●	17	33	47	63
●	21	37	49	66
●	23	FREE	60	70
●	18	39	59	74
●	●	●	●	●

Sample Problems

If $321x = 321$, then $x =$ (1) .

A factor of every even number is (2) .

To solve equations with 3 unknowns, you usually have at least (3) equations.

$\sqrt{5^2 - 3^2} =$ (4) .

When 100 000 is written in scientific notation, the exponent on the 10 factor is (5) .

12_4 is what base 10 numeral? (6)

The additive inverse of -7 is (7) .

An octagon has (8) sides.

The value of the determinant $\begin{vmatrix} 2 & 3 \\ 3 & 9 \end{vmatrix}$ is (9) .

Twice the number of sides in a pentagon is (10) .

What is the smallest prime number greater than 2^3? (11)

$2\sqrt{36} =$ (12) .

A *prime* number greater than 11 and less than 17 is (13) .

The positive root of $x^2 - 13x - 14 = 0$ is (14) .

The value of $30 \cdot \sin 30°$ is (15) .

The value of $32 \cdot \cos 60°$ is (16) .

Five times the number of roots of a cubic equation *plus* the number of roots of a quadratic equation is (17) .

$6\sqrt[3]{27} =$ (18) .

$|-7| + |-12| =$ (19) .

The number of school days in a regular week *times* the number of seasons in the year is (20) .

The product of the roots of $x^2 - 10x + 21 = 0$ is (21) .

The sum of the roots of $x^2 + 22x + 40 = 0$ is (22) .

35_6 is what base 10 numeral? (23)

The negative of the product of the roots of $2x^2 - 29x - 48 = 0$ is (24) .

$3^2 + 4^2 =$ (25) .

If $3x - 24 = 54$, then $x =$ (26) .

If $\frac{x}{3} = 9$, then $x =$ (27) .

The number of days in February 1982 is (28) .

A prime number greater than 24 and less than 30 is (29) .

The number of days in the month of June is (30) .

The number of days in the month of August is (31) .

The area of an isosceles right triangle with legs 8 cm is (32) .

$(\sqrt{9})(\sqrt{121}) =$ (33) .

One-half of 16 *plus* twice 13 is (34) .

Carol worked 4 problems in 20 minutes. At this rate, how many minutes will it take her to work 7 problems? (35)

The area of a square with a diagonal of $6\sqrt{2}$ cm is (36) .

The number of days in April *plus* the number of days in a week is (37) .

Twice the prime between 17 and 23 is (38) .

The value of the determinant $\begin{vmatrix} 3 & -9 \\ 2 & 7 \end{vmatrix}$ is (39) .

If $\frac{x}{2} + x = 60$, then x = (40) .

$3 \times 7 + 5 \times 4 =$ (41) .

How many days in 6 weeks? (42)

If $19x = 817$, then x = (43) .

$(4\sqrt{5})(\sqrt{5}) + 14 =$ (44) .

The product of the negative x– and y– intercepts of the ellipse $\frac{x^2}{81} + \frac{y^2}{25} = 1$ is (45) .

If the slope of a line is $-1/46$, then the slope of a line perpendicular to it is (46) .

If $x + 2x = 141$, then x = (47) .

$30 \tan 45° + 18 \cos 0° =$ (48) .

The area of a square with a perimeter of 28 is (49) .

The scale on a map is 1 cm = 20 m. How many metres are 2 1/2 cm on the map? (50)

A prime number 1 more than $10\sqrt{25}$ is (51) .

Thirteen times the ordinate of the vertex of $f(x) = 4 - x^2$ is (52) .

Find the tenth term in the sequence 17, 21, 25, 29, . . . (53)

Find the geometric mean between 27 and 108. (54)

Find the eleventh term in the sequence 5, 10, 15, 20, . . . (55)

If $f(x) = x^2 + x$ and $g(x) = x + 3$, find $f(g(x))$. (56)

If $f(x) = x^2 + 3x + 3$, find f(6). (57)

How many terms are in the sequence 18, 24 . . . 336? (58)

f $\log_3 x = 3$, find $2x + 5$. (59)

How many degrees in $\frac{\pi}{3}$ radians? (60)

Find the arithmetic mean between 54 and 68. (61)

If $f(x) = x^2 - 2$, find f(8). (62)

If $\log_4 x = 3$, find $x - 1$. (63)

The absolute value of the product of the abscissas of the foci of $\frac{x^2}{9} + \frac{y^2}{25} = 1$ is (64) .

If $\log_x 216 = 3$, find $5(2x + 1)$. (65)

If $f(x) = x^3 + 2$, find f(4). (66)

If $\log_{16} x = \frac{3}{2}$, find $x + 3$. (67)

The product of the positive values of the x– and y– intercepts of $\frac{x^2}{289} + \frac{y^2}{16} = 1$ is (68) .

$\sqrt{49} \cdot \sqrt{100} - 1 =$ (69) .

The product of the coordinates of the centre and the length of the diameter of $x^2 + y^2 - 14x - 2y + 25 = 0$ is (70) .

The number of days it rained in a story about Noah *plus* the number of days in the month of March is (71) .

If $\log_3 x = 4$, find $x - 9$. (72)

$3\sqrt{625} - 2 =$ (73) .

$0.0074 \times 10^4 =$ (74) .

If $\log_x 25 = 2$, find $3x^2$. (75)