

DAWSAN'S MATHS EXPRESS

D. Williams

Have a Bash for Cash



NAME



DAWSAN'S
Maths
EXPRESS

S. Edwards & D. Williams

These fun calculations are devised
to be to be used in conjunction with the
Dawsan's Maths Dictionary.

Have a Bash for the Cash!

In this mini-assignment you will be striving to get to the grand prize of "R1 000 000"! In order to achieve this you need to answer 100 questions and score 100%, in the allocated time period! There are 20 rounds each with 5 questions. You may use calculators and your Dawson's Maths dictionary. The questions follow-on i.e. you must use your previous answer to work out the next question. Once you have completed the 5 questions in the round you must use the values for each of your answers to complete an equation. If the equation balances, you are correct and may proceed to the next round. If not, go back and check your answers. Remember you must always apply the rule for the order of operations.

Example Round:

- | | | |
|---|--------------------------------|------------------|
| a) $12 + 4 \times 8 + 2$ | $= 12 + (4 \times 8) + 2$ | $= 46$ |
| b) + 3^3 | $= 46 + (3 \times 3 \times 3)$ | $= 46 + 27 = 73$ |
| c) x 3^{rd} counting number | $= 73 \times 2$ | $= 146$ |
| d).... x $2\frac{1}{2}$ | $= 146 \times \frac{5}{2}$ | $= 365$ |
| e).... - CCLXV | $= 365 - 265$ | $= 100$ |

EQUATION: $a + b + c = d - e$	$46 + 73 + 146 = 365 - 100$	$265 = 265$	✓
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Get ready to start!



GO!

Round 1:

- a) $8 + 3 \times 6 - 4$
- b) $\div 1^{\text{st}}$ prime number
- c) $+ 3^2$
- d)..... \div the number of years in a decade.
- e) $+ 2^{\text{nd}}$ multiple of 9

EQUATION: $a + c = b \times d + e$ _____

Round 2:

- a) Divide the number of degrees in a square by one score.
- b) $+ \text{number of degrees in a triangle}$
- c) $- 15 \text{ dozen}$
- d) $\times 4^{\text{th}}$ prime number
- e) $\div \text{CXXVI}$

EQUATION: $a \times c - b = d \times e$ _____

Round 3:

- a) How many words are spelled incorrectly in the following sequence?
Octagon; millennium; multiplicant; geometry; hypotenews; symmetry
- b) $+ \text{number of months with 31 days}$
- c) $\times 2^3$
- d) $- 2 \text{ baker's dozen}$
- e) $\times 3 - 21$

EQUATION: $a + b + c + d = e$ _____

Round 4:

- a) Multiply the number of sides on a heptagon by the number sides on an octagon.
- b) $\div 0,2 + \text{number in a gross}$
- c) If is the perimeter of a square, find the length of one side.
- d) Number of degrees in a triangle minus
- e) $+ 2 \text{ centuries} + 2 \text{ decades} + 2^{\text{nd}}$ composite number

EQUATION: $a + b - c = d + e$ _____

Round 5:

- a) How many legs on 12 dogs, 11 cats and 5 birds?
- b) + 8th prime number
- c) $\sqrt{\dots\dots} \times \sqrt{64}$
- d) Find 75% of
- e) $[3 \times 1\,453] - [\dots\dots]^2$

EQUATION: $[a + b] - [c + d] = 23 \times e$ _____

Round 6:

- a) If 5^3 is a square number divide it by 2. If not, multiply it by 2.
- b) – the number of minutes in $3\frac{1}{2}$ hours
- c) + $([1 \times 10^2] + [7 \times 10^1])$
- d) $\div 6 - \sqrt{169}$
- e) $[\dots\dots]^2 + 4^2$

EQUATION: $a + b + c - d = e - d$ _____

Round 7:

- a) Find the volume of a crate with a length of 3m, breadth of 4m and height of 5m.
- b) + number of sides on 6 cubes
- c) + $\square = 5$ score
- d) $\div 8$
- e) \times the reciprocal of $\frac{1}{10}$

EQUATION: $b \div c \times d = a \div e$ _____

Round 8:

- a) C A R S is to S C A R as a great gross is to what number?
- b) Find $\frac{1}{3}$ of
- c) \div by the number of colours on the South African flag.
- d) – number of seconds in $2\frac{1}{6}$ minutes
- e) + total number of years in 2 millennia, 3 centuries, 8 decades and 2 years.,

EQUATION: $\frac{a}{c} = \sqrt{d} = b - e$ _____

Round 9:

- a) Multiply the number of faces on a dodecahedron by the number of its edges.
- b) If equals minutes, how many hours?
- c) + $2\frac{3}{4}$ of 60
- d) $\frac{1}{19}$ of
- e) + the total number of singers in a quintet, 2 trios, an octet and 2 soloists

EQUATION: $\frac{a}{2} = b \times e = c + d$ _____

Round 10:

- a) If 1 364 is divisible by 11, start with a gross. If not, start with a great gross.
- b) Express 48 as a fraction of (Simplify)
- c) [..... + $2\frac{2}{3}$] $\div \frac{1}{4}$
- d) + number of Snow White's dwarfs + 7th prime number
- e) $\times \frac{1}{6}$

EQUATION: $\sqrt{a} = c = b \times d = 2 \times e$ _____

Round 11:

- a) If a cup of tea holds 125ml, how many litres are needed for 40 cups.
- b) How many millilitres in
- c) Find 20% of
- d) Decrease by $\frac{3}{5}$ of $1\frac{1}{2}$ millennia
- e) - 3 score - 2 decades

EQUATION: $\frac{b}{c} = \frac{d}{e} = a$ _____

Round 12:

- a) Through how many degrees does the hour hand of a clock move from 6am to 9am?
- b) + the number of degrees in a rhombus
- c) - [the number of degrees in a straight \angle + number of degrees in a right \angle]
- d) $14^2 - \dots + 2^2$
- e) $\times [2\frac{2}{3} + \frac{5}{6}]$

EQUATION: $a = b \div 5 = c \div 2 = d + e$ _____

Round 13:

- a) Find the average of: 11; 13; 16; 17; 18
- b) x the mode of: 6; 6 ; 7; 8; 8 ; 9 ; 9 ; 9
- c) Find the supplementary angle of
- d) Increase by the number of degrees in one angle of an equilateral triangle.
- e) + the number of degrees in $\frac{1}{2}$ a right angle

EQUATION: $a + b = c + d = e$ _____

Round 14:

- a) Add 14% VAT to an item marked at R150
- b) How many 50c coins in
- c) $\sqrt{\dots - 18}$
- d) \div the number of faces on a cube.
- e) $[\dots]^3 \times 6\frac{1}{3}$

EQUATION: $a = 9,5 \times c = 57d = e = \frac{1}{2} b$ _____

Round 15:

- a) "All odd numbers are prime". If this statement is true start with 3^4 . If not start with 4^3 .
- b) If is the area of a square, find the length of one side.
- c) If is the length of one side of a regular hexagon, find the perimeter
- d) If is the perimeter of an equilateral Δ , find the length of one side.
- e) + CCXL

EQUATION: $a - c = 2b = d = \sqrt{e}$ _____

Round 16:

- a) Take the number of the 1st month with 30 days and multiply it by the 3rd month with 31 days.
- b) + 40% of 150
- c) + the total number in a dozen and a baker's dozen.
- d) \div the 3rd multiple of seven
- e) + $\sqrt{1296}$

EQUATION: $(a + b + c) \div d = e$ _____

Round 17:

- a) Reading from left to right, how many numbers can you find (spelled out) in the following sentence. "Weight, quinine, money and tension were discussed in the fourth talk." Find the sum.
- b) Multiply by the number of misspelled words in the following sequence:
TRISKAIDEKAPHOBIA; RECIPROCAL; PROTRACTER; VERTIX; TESSELATION
- c) V I L E is to L I V E as 2919 is to what number? Increase by this latter number.
- d) $\sqrt{\dots}$ + number in a gross + the 2nd prime number
- e) $\times 10 + 3^2$

EQUATION: $3 \times a = b = \frac{1}{2}d = c - e$ _____
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Round 18:

- a) In the following sentence, all but how many letters of the alphabet were used?
"Then a quick, sly fox jumped over the high wall."
- b) $[\dots]^4 + ([1 \times 10^2] + [8 \times 10^1] + [4 \times 10^0])$
- c) Multiply your answer by the only number that is not prime, composite nor even.
- d) \div the value represented by the prefix tetra
- e) $\div 12 \frac{1}{2}$

EQUATION: $100 \times a = b = c = (d \times e)$ _____
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Round 19:

- a) Identify all the letters in the boy's name MAXIMILIAN that are found in the system of Roman numerals. Now find the sum of their individual values. For example in the word CIVIC it would be $100 + 1 + 5 + 1 + 100 = 207$.
- b) Find the actual remainder if is divided by 11.
- c) $\times \frac{3}{4} - 3 \frac{3}{8} + \frac{7}{8}$
- d) \times the only integer that is neither positive nor negative.
- e) + the number of marathons (standard) in 126,6km

EQUATION: $[b \times 10^1] + [c \times 10^3] + [d \times 10^2] + [e \times 10^0] = a$ _____

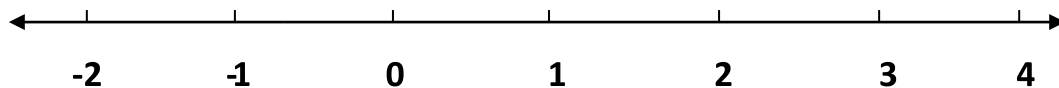
Are you ready for the Final Round?

In this the final round there will be no equation at the end. So work carefully as you have no way of checking the accuracy of your calculations!
Good luck!

Round 20:

a) On the number line below show the relative positions of the following:

$$2,5; \frac{1}{4}; 175\%; -1\frac{1}{2}; 3\frac{1}{2}; -0,5$$



b) Add all the **positive** values given in question a)

c) Subtract all the **negative** numbers from

d) Now if your answer to (b) is represented by Ω and your answer (c) is represented by Υ ,
find the value of: $[\Upsilon]^2 \div \Omega \times [\Omega + \Upsilon]$

e) $(\dots \times 2\frac{1}{3} \div 0,02 \times 10^2 + [265 \times 10^3])$

You are a WINNER!



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Answers

Round 1:

a) $8 + (3 \times 6) - 4 = 22$ b) $22 \div 2 = 11$ c) $11 + 3 \times 3 = 20$ d) $20 \div 10 = 2$ e) $2 + 18 = 20$

EQUATION: $22 + 20 = 11 \times 2 + 20 = 42$

Round 2:

a) $360 \div 20 = 18$ b) $18 + 180 = 198$ c) $198 - 180 = 18$ d) $18 \times 7 = 126$ e) $126 \div 126 = 1$

EQUATION: $18 \times 18 - 198 = 126 \times 1 = 126$

Round 3:

a) 4 b) $4 + 7 = 11$ c) $11 \times 2 \times 2 \times 2 = 88$ d) $88 - 26 = 62$ e) $62 \times 3 - 21 = 165$

EQUATION: $4 + 11 + 88 + 62 = 165$

Round 4:

a) $7 \times 8 = 56$ b) $56 \div 0,2 + 144 = 424$ c) $424 \div 4 = 106$ d) $180 - 106 = 74$

e) $74 + 200 + 20 + 6 = 300$

EQUATION: $56 + 424 - 106 = 74 + 300 = 374$

Round 5:

a) $48 + 44 + 10 = 102$ b) $102 + 19 = 121$ c) $11 \times 8 = 88$ d) 66 e) $4359 - 4356 = 3$

EQUATION: $[102 + 121] - [88 + 66] = 23 \times 3 = 69$

Round 6:

a) $125 \times 2 = 250$ b) $250 - 210 = 40$ c) $40 + 170 = 210$ d) $210 \div 6 - 13 = 22$

e) $22 \times 22 + 4 \times 4 = 484 + 16 = 500$

EQUATION: $250 + 40 + 210 - 22 = 500 - 22 = 478$

Round 7:

a) $3 \times 4 \times 5 = 60$ b) $60 + 36 = 96$ c) $96 + \underline{4} = 100$ d) $4 \div 8 = 0,5$ e) $0,5 \times 10 = 5$

EQUATION: $96 \div 4 \times 0,5 = 60 \div 5 = 12$

Round 8:

a) 8172 b) $8172 \div 3 = 2724$ c) $2724 \div 6 = 454$ d) $454 - 130 = 324$

e) $324 + 2382 = 2706$

EQUATION: $8172 \div 454 = 18 = 2724 - 2706 = 18$

Round 9:

a) $12 \times 30 = 360$ b) 6 c) $6 + 165 = 171$ d) $171 \div 19 = 9$ e) $9 + 5 + 6 + 8 + 2 = 30$

EQUATION: $360 \div 2 = 6 \times 30 = 171 + 9 = 180$

Round 10:

a) 144 b) $\frac{1}{3}$ c) $[\frac{1}{3} + 2\frac{2}{3}] \div \frac{1}{4} = 3 \times 4 = 12$ d) $12 + 7 + 17 = 36$ e) $36 \times \frac{1}{6} = 6$

EQUATION: $12 = 12 = \frac{1}{3} \times 36 = 2 \times 6$

Round 11:

a) 5 b) 5 000 c) 1 000 d) $1\,000 - [\frac{3}{5} \times 1500] = 100$ e) $100 - 60 - 20 = 20$

EQUATION: $5\,000 \div 1\,000 = 100 \div 20 = 5$

Round 12:

a) 90 b) $90 + 360 = 450$ c) $450 - [180 + 90] = 180$ d) $196 - 180 + 4 = 20$

e) $20 \times 3\frac{1}{2} = 20 \times \frac{7}{2} = 70$

EQUATION: $90 = 450 \div 5 = 180 \div 2 = 20 + 70 = 90$

Round 13:

a) 15 b) 135 c) 45 d) $45 + 60 = 105$ e) $105 + 45 = 150$

EQUATION: $15 + 135 = 45 + 105 = 150$

Round 14:

a) $R150 + 21 = 171$ b) 342 c) $\sqrt{342 - 18} = 18$ d) $18 \div 6 = 3$ e) $27 \times \frac{19}{3} = 171$

EQUATION: $171 = 9,5 \times 18 = 57 \times 3 = 171 = \frac{1}{2} \times 342 = 171$

Round 15:

a) $4 \times 4 \times 4 = 64$ b) 8 c) 48 d) 16 e) $16 + 240 = 256$

EQUATION: $64 - 48 = 2 \times 8 = 16 = \sqrt{256} = 16$

Round 16:

a) $4 \times 5 = 20$ b) $20 + 60 = 80$ c) $80 + 25 = 105$ d) $105 \div 21 = 5$ e) $5 + 36 = 41$

EQUATION: $(20 + 80 + 105) \div 5 = 41$

Round 17:

a) $8 + 9 + 1 + 10 + 4 = 32$ b) $32 \times 3 = 96$ c) $96 + 1929 = 2025$ d) $45 + 144 + 3 = 192$

e) $192 \times 10 + 9 = 1929$

EQUATION: $3 \times 32 = 96 = \frac{1}{2} \times 192 = 2025 - 1929 = 96$

Round 18:

a) 2 (B and Z) b) $16 + 184 = 200$ c) $200 \times 1 = 200$ d) $200 \div 4 = 50$ e) $50 \times \frac{2}{25} = 4$

EQUATION: $10 \times 2 = 200 = 200 = 50 \times 4 = 200$

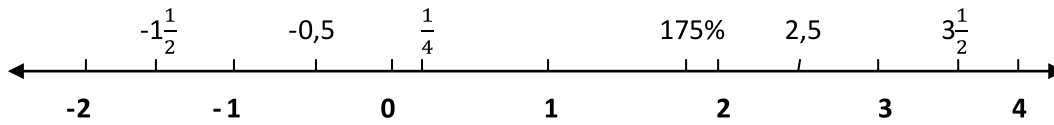
Round 19:

a) 2063 b) 6 c) $[4\frac{4}{8} - 3\frac{3}{8}] + \frac{7}{8} = 1\frac{1}{8} + \frac{7}{8} = 2$ d) $2 \times 0 = 0$ e) $0 + 3 = 3$

EQUATION: $60 + 2\,000 + 0 + 3 = 2\,063$

Round 20:

a)



b) $\frac{1}{4} + 175\% + 2,5 + 3,5 = 0,25 + 1,75 + 2,5 + 3,5 = 8$

c) $8 - 0,5 - 1\frac{1}{2} = 8 - 2 = 6$

d) $[6]^2 \div 8 \times [8 + 6] = 36 \div 8 \times 14 = 4,5 \times 14 = 63$

e) $63 \times \frac{7}{3} \div 0,02 \times 100 + 265\,000 = 147 \div 0,02 \times 100 + 265\,000 = 735\,000 + 265\,000$
 $= 1\,000\,000$!!!!!



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