

10/1 In order to make a Muesli Mix, Mrs Moppet mixes 4kg of Apricots @ \$10.50 per kg, 3 kg of Branflakes @ \$2.40 per kg, 1 kg of Currants @ 55 cents per 100g and 2kg of Pineapple Chunks @ 70 cents per 100g. She mixes it together as a 10kg mix. She sells it @ 95 cents per 100g. How much profit will she make if she sells all 10kg?

Attempts:

1

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10/2 Every number can be reduced to a single digit if we add the individual digits until we get a number less than 10.

Eg. $13 \rightarrow 4$ thus $D(13)=4$

$6453 \rightarrow 18 \rightarrow 9$ thus $D(6453) = 9$

$231675 \rightarrow 24 \rightarrow 6$ thus $D(231675) = 6$

a) What is $D(45321)$?

b) What is $D(9 \times 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1)$?

Attempts:

1	2	3	4	5
a)	a)	a)	a)	a)
b)	b)	b)	b)	b)

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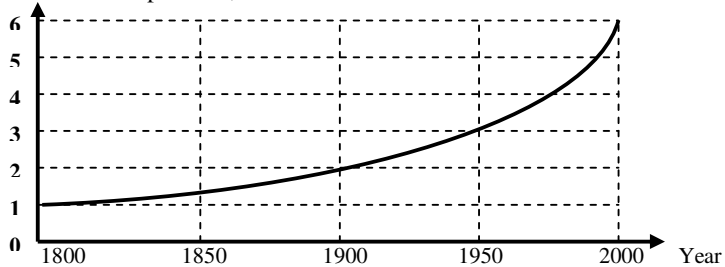
b) What is $D(9 \times 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1)$?

Attempts:

a)	a)	a)	a)	a)
b)	b)	b)	b)	b)

10/3

Population, in billions



This graph depicts the world population in billions from 1800 to 2000. On average, from 1950 to 2000 approximately how many million people were added each year to the world's population?

Attempts:

1

2

3

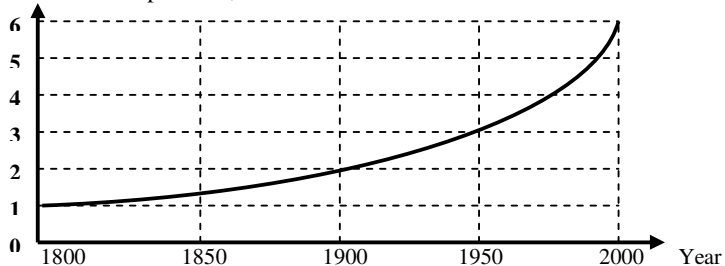
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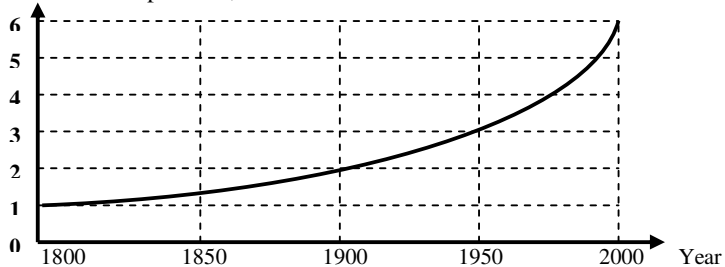
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10/4 According to the novel, “The Da Vinci Code”, the number of members of the Priory of Sion is one more than the sum of the first six positive powers of three. If true, how many members does the Priory of Sion have?

Attempts:

1

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10/5 Yesterday I bought 2 kg of apples and 3 kg of bananas. Today I bought 3kg of apples and 4 kg of bananas. If the price of apples doubled overnight and the price of bananas tripled (times 3) overnight and the cost yesterday was \$13 and the cost today was \$45, what would 1 kg of apples have cost yesterday? What would 1 kg of bananas have cost today? You must get BOTH correct.

Attempts:

1	2	3	4	5
Apples	Apples	Apples	Apples	Apples
Bananas	Bananas	Bananas	Bananas	Bananas

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Attempts:

Apples	Apples	Apples	Apples	Apples
Bananas	Bananas	Bananas	Bananas	Bananas

10/6 How many guests were present at a party if every two used a dish for rice between them, every three used a dish for soup between them, every four used a dish for meat between them, and there were 65 dishes altogether?

Attempts:

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Attempts:

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10/7 A rectangular picture measures 16cm by Acm.

If 2cm were cut off from all four sides, the new area of the picture would be 228cm^2 .

What was the value of A?

Attempts:

1

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Attempts:

1

2

3

4

5

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10/8 How many different pairs of prime numbers sum to 50?

Attempts:

1

2

3

4

5

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10/8 How many different pairs of prime numbers sum to 50?

Attempts:

1

2

3

4

5

--	--	--	--	--

10/8 How many different pairs of prime numbers sum to 50?

Attempts:

1

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10/9 A swimming pool measures 100m by 20m and is 2m deep. A bottle of soft drink contains 500ml.
(A litre has a volume of 1000 cm^3). How many soft drink bottles would we need to fill the pool?

Attempts:

1

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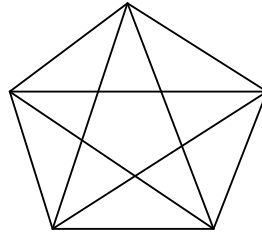
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10/10



How many triangles are there? (There are over 20)

Attempts:

1

2

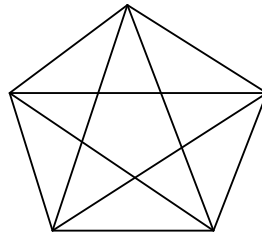
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10/10



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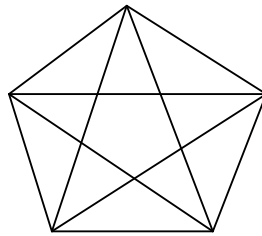
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10/10



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Attempts:

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10/11 B is a digit in the seven-digit whole number **8,642,B35**.

8,642,B35 is divisible by 3. What is the sum of all possible values of the digit B?

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10/12 “Good morning George, how are your three children?”
“They are good Condalisa. It was their birthday yesterday. Did you know they were all born on Feb 10th?”
“ That’s amazing George.”
“ Did you know that their ages multiply to 60, and that I’m 40 next week.”
“What did the twins get as a present, George?”
“ I bought them a couple of oil wells each, Condalisa.”
How much do the children’s ages add to?

Attempts:

1

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10/13 A triangle has one angle 30 degrees greater than the smallest and 18 degrees less than the largest.
What are the three angles?

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Attempts:

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10/14 There is a pole in a lake. One-half of the pole is in the ground, another one-third of it is covered by water, and 11m is out of the water.

What is the total length of the pole in m?

Attempts:

1

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10/15 In the fraction: $\frac{2005}{125}$, place a decimal point between any two digits of “2005” AND place a decimal point between any two digits of “125”. (For example, you are allowed to use 200.5; but NOT .2005 or 2005.)
 What is the sum of the least fraction and the greatest fraction that you could create?

Attempts:

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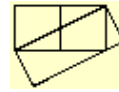
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10/16 The squares in the diagram have side length 12cm.

What is the area of the slanted rectangle?



Attempts:

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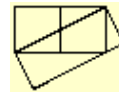
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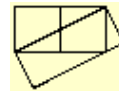
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10/17 Glenn and Jason each have a collection of cricket balls. Glenn said that if Jason would give him 8 of his balls they would have an equal number; but, if Glenn would give Jason 8 of his balls, Jason would have 3 times as many balls as Glenn. How many balls does Jason have?

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10/18 P(n) is shorthand for the product of all the numbers from 1 to n
and S (n) is shorthand for the sum of all the numbers from 1 to n.

For example $P(5) = 5 \times 4 \times 3 \times 2 \times 1 = 60$

$$S(4) = 4+3+2+1 = 10$$

Calculate $S(P(2) + P(3)) + P(S(2) + S(3))$

Attempts:

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Attempts:

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10/19 Charlene's birthday, March 19, is one week before her dad's birthday and one month before her mum's birthday. On her dad's birthday in 2005, Charlene noticed that her age (in years) was exactly $\frac{1}{3}$ of her dad's age (in years). On her mum's birthday in 2006, Charlene's age (in years) will be exactly $\frac{1}{3}$ of her mom's age (in years). Charlene's mom was born in 1955. In what year was Charlene's dad born?

Attempts:

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Attempts:

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10/20 There are 200 goldfish in a tank and 99% of them are red fish. How many of these do I take out of the tank to make it 98% red fish?

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