Second Level Maths Tasks
Week beginning 8.2.2021

Maths Homework Options

To keep your mental maths up to scratch, keep working through your maths options sheets.

10-15 minutes during each maths session will help your number work.

Inheritance Problem

When George reached the age of 60, and his wife Enid emigrated to Australia. Five years later he discovered gold, became extremely rich. When he was 80 years old he decided to share some of his wealth with his family in UK. Having lost touch with his UK family, he hired a private investigator to track down his relatives. The private investigator placed adverts in newspapers. 24 people wrote in. As William only had 17 relatives, it is obvious that some of the claimants are not relatives.

It is your job to first fill out George's family tree and then look at the statements to decide who is a true relative and who deserves no money! Family tree and clues on page 4, statements on page 5.

Algebra—assessment

*Don't do until you have completed previous 4 weeks work on algebra.

Have a go at the assessment on page 3 and see how you're progressing with expressions and equations.

Hint—questions 5 needs you to know how to find the perimeter of a shape. We worked in that just before Christmas—can you remember? Email it in if you would like me to mark it.

Word Problems

I've added a few word problems on page 6. They use a mix of your operations (addition, subtraction, multiplication, division) and have more than one step you need to complete to solve them.

Remember drawing a mathematical diagram can help you think about how to solve the problem, as can looking for key vocabulary.

5-a-day

I've put some number problems on the next sheet, you can choose 5 each day to work on like we would in class.

Rocket Rounding

Watch this video if you need a refresher on rounding numbers

https://www.bbc.co.uk/bitesize/topics/zh8dmp3/articles/zpx2qty

Round these to the nearest 10

154   289   8361   558   12085

Round to the nearest 100

602   484   1075   3428   9886

Round to the nearest 1000

6747   8273   9928   20188   6187

Round to the nearest whole number

1.6   2.34   9.9   7.5   8.023

**Then have a go at the Rocket Rounding game

https://www.topmarks.co.uk/maths-games/rocket-rounding

5-a-day

Choose a level of challenge, choose a row to do each day

Mild

- 7765 + 2323   9908-3857   5221 x 3   480÷5   3x5 < 1.4x10, true or false?
- 7654+2234   9807-1213   657 x 6   245÷7   994, 996, 998, ___, ___
- 5488+2117   6755-4825   676 x 8   624÷8   24+_____=100?

Medium

- 76.225 + 887.21   8525.9—604.8   3.76 x 9   221.4÷6   2000, 2200, 2400, ___, ___
- 7.552 + 26.13   986.61-16.99   3842.4 x 8   524.88÷8   10.5, 10, 9.5, ___, ___
- 563.88 + 663.74   582.5-97.38   875.7 x 6   336.35÷7   25% of 20?

Spicy
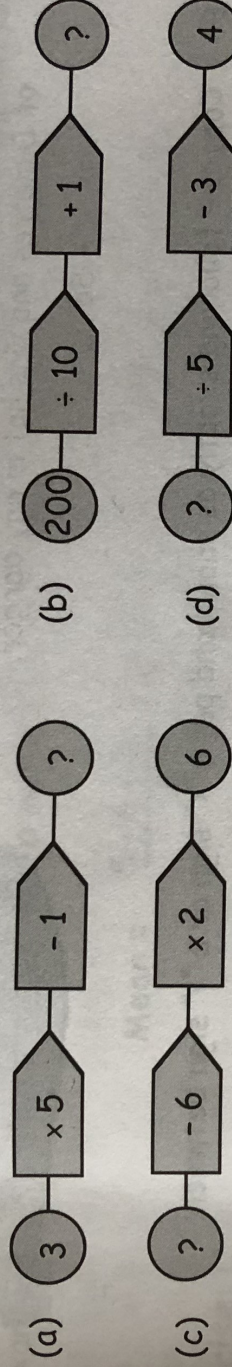
- 94.4 + 456.73 + 2.835   35.5-7.826   42x83   8601÷7   Which is biggest 2.1,2.005,2.094
- 653.7 + 2513.8 + 8.564   8743-8.909   67x45   1718.8 ÷ 8   6x – 2 = 34, x=?
- 8.87 + 4438.8 + 41.9   482—6.654   99x21   1514.4475÷5   1025, 1000, 975, ___, ___

Topic in a Nutshell

1. Copy each of the following and give a simplified answer each time :-

(a) $3x + 7x$

(b) $5x + 3x + x$

(c) $x + x + x$

(d) $12x - x - 8x$

(e) $4x + 6x - 9x + x$

(f) $2x + 7x - 1$

(g) $3x + 5 - 2x + 1$

(h) $x + x + x + y$

(i) $2a + 5b - a - b$

(j) $4x + 2y - 3x + y - 6$

(k) $8x^2 + 4y^2 + x^2 - 3y^2$

(l) $3x^2 + 4x + 2x^2 - 3x$

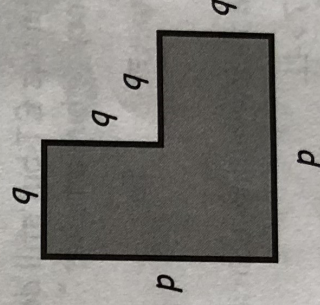2. In each case, decide what number the ? represents :-

(a) 3 → $\times 5$ → -1 → $?$

(b) 200 → $\div 10$ → $+1$ → $?$

(c) $?$ → -6 → $\times 2$ → 6

(d) $?$ → $\div 5$ → -3 → 4

3. Write a number machine for each of the following :-

(a) " a multiplied by 2, added on to b".

(b) " x divided by y, subtracted from 20".

4. If $x = 1$, $y = 2$, $z = 3$ and $w = 10$, find the value of :-

(a) $3x + 4y$

(b) $w - 3x$

(c) $10w - 1$

(d) $5z + 2y + 3$

(e) $30z - 4w + 5z$

(f) $80 - 10xy + zw$

(g) $w^2 - x^2$

(h) $6x^2 - y^2 - 2$

(i) $10xyzw$

5. (a) Find an expression for total perimeter of this shape (in cm) in terms of p and q.

(b) Calculate the perimeter when :-

$p = 6$ and $q = 3$.

6. Copy each of the following and find the value of x by solving the equation :-
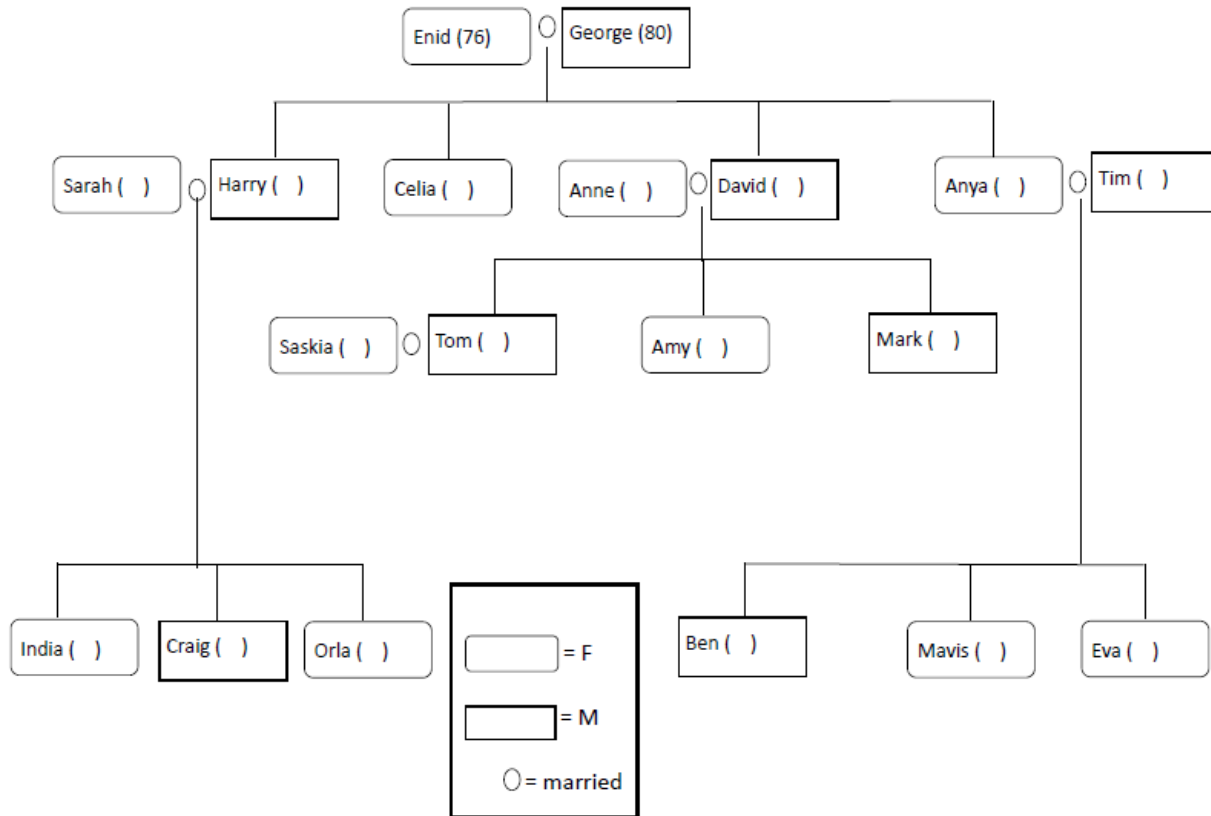
(a) $x - 9 = 2$

(b) $x + 15 = 18$

(c) $7x = 49$

(d) $2x + 4 = 14$

(e) $9x - 1 = 44$

(f) $7x + 5 = 5$

(g) $\frac{1}{5}x = 8$

(h) $\frac{1}{3}x = 10$

(i) $\frac{1}{2}x + 3 = 7$

Family Tree and Clues

Enid (76) ◯ George (80)

Sarah ( ) ◯ Harry ( ) Celia ( ) Anne ( ) ◯ David ( ) Anya ( ) ◯ Tim ( )

Saskia ( ) ◯ Tom ( ) Amy ( ) Mark ( )

India ( ) Craig ( ) Orla ( ) Ben ( ) Mavis ( ) Eva ( )

[ ] = F
[ ] = M
◯ = married

Clues to fill in family tree

As nobody is older than 100, a 100 number square might be useful.

1. George and Enid's eldest son Harry has an age which is a multiple of 6 and 9. It is greater than 40.
2. Harry is married to Sarah. Sarah loves gardening. Her age is a prime number. The sum of the digits of her age is 8. She is younger than George.
3. Harry and Sarah's oldest daughter is called India. She has 150 friends on Facebook. Her age is a square number. The product of the digits of her age is 10.
4. India's brother, Craig got engaged on 29th January. His age is a multiple of 7. The difference between the digits of his age is 1.
5. In 5 years' time, Craig's sister Orla will be half the age Harry is now.
6. George and Enid's other son David planted 44 sycamore trees last year. 12 and 16 are factors of his age.
7. David's wife Anne is younger than Sarah but older than David. She lives at 50 Thomas Rd. Her age is divisible by 3.
8. David and Anne's oldest son Tom is married to Saskia. 5 years ago, his age was a square number. In 6 years' time, it will be a square number again.
9. Saskia spent £25 on gifts last month. She is 9/10 of her husband's age.
10. Amy used to argue a lot with her brother Tom. Amy's age is the average of Tom's, Craig's and Saskia's.
11. Tom's brother Mark's age is 80% of his cousin India's. His favourite breakfast cereal is 80% fat free.
12. George and Enid's daughter Celia never married. The product of the 2 digits of her age is the first digit. The sum of the two digits is 45 less than her age.
13. George and Enid's daughter Anya married when she was 21. She went to Thailand for her honeymoon. The sum of the digits of her age is 20% of her age. The product of the digits = Mark's age.
14. Anya's husband is called Tim. His age is a prime number. The sum of the digits of his age is also a prime number. He is older than 50 but not yet 65.
15. Anya says that Ben is her favourite son! Two years ago the square root of his age was 4.
16. Mavis is one of Ben's sisters. Her age is a prime number. It has 2 digits. The sum of these digits is a square number. The product is the same as the second digit. Her favourite colour is lilac.
17. Mavis shares a bedroom with her younger sister Eva. Eva's age is also a prime number. Her favourite colour is brown. The first digit of her age is the same as the second digit.

People Claiming Money

Claiming to be	What they say	True	False
Harry	I am George and Enid's oldest son. I am 54 years old. I am married to Sarah and have one son and 2 daughters.		
Ben	I am George and Enid's grandson. I am 18 years old and have one sister. My mother is called Anne.		
Saskia	I am married to Tom. I am mad about horses. I am 27 years old. My father –in-law is David.		
Craig	My younger sister is called India. Enid is my grandmother.		
Amy	I am 5 years older than my brother Mark. George is my grandfather.		
Orla	I am 22 years old. I am one year older than Craig and 3 years younger than India.		
Mavis	I am 13 years old. My younger sister is 3 years younger than me.		
Anne	I have 3 children. My husband, who is 3 years younger than me, is George and Enid's son.		
Tim	I am married to George and Enid's daughter Anya. We have a good marriage because we are the same age.		
Sarah	I am married to Harry (George and Enid's oldest son). Harry is one year older than me.		
Tom	David is my father and George is my grandfather. I am 30 years old.		
Celia	George and Enid are my parents. I am 51 years old and have a husband who is 2 years older than me.		
Eva	Hi, I am Eva. My mum is called Anya. Her dad is George who lives in Australia. I am 11 years old. I want to buy a new phone.		
David	I am one of George and Enid's sons. I am married to Anne. I am 48 years old and love sycamore trees.		
Amy	My father is called David. He is 22 years older than me. I have a younger brother called Mark and an older brother Tom.		
Mark	I am 22 years old. I am a grandson of George and Enid. I play the drums and need money for a new set.		
Ben	I am 18 years old. I have two younger sisters. My mother Anya is one of George and Enid's daughters.		
Craig	I am 21 years old. Anya is my mother and David is my father.		
Mavis	I am 13 years old. My hobbies are fashion and watching TV. My 18 year old brother doesn't deserve any money.		
Harry	I am George and Enid's first son. I visited them in Australia last year. My wife and I have 4 children.		
Tim	George is my father. My wife Anne is younger than me. We have 3 children.		
Celia	Enid is my mother. I am 4 years younger than Harry and 4 years older than David.		
Mark	David is my father. George is my grandfather. I am 6 years younger than my sister Amy.		
Sarah	I am the daughter-in-law of George and Enid. I married their son Tim just after we left university.		

Word Problems

Olivia wins £802,649 on the lottery one week and £100,876 on a scratch card the following week. She shares the winnings equally between 3 of her family members. How much money do they get each?

Bailey bought twenty four bags of sweets with eighty six pieces in each one. He plans to divide all the sweets evenly among eight friends. How many sweets will they each get?

Rhys loves Lego. He had 576,175 Lego bricks before selling 216,175 of them. He split the remaining bricks equally into 8 boxes. How many bricks were in each box?

In a garden centre, rose seeds cost £1.38, lily seeds cost £1.15 and daffodil seeds cost 85p. Rhona buys eight packets of rose seeds and 12 packets of daffodil seeds. How much change does she get from a £50 note?

Cleo has 24 mantis. Three quarters of the mantis are dead leaf mantis, four are orchid mantis and the rest are zebra mantis. How many zebra mantis does she have?

A shop sells 6 green apples for 75p and 10 red apples for 90p. Oriana bought 18 green apples and 40 red apples. She paid with £10. How much change did she get?

A car boot sale charges an entrance fee of 50p for adults and 30p for children. 100 adults and 80 children pay to go in. How much money do they pay altogether?

A cinema ticket cost £8.29 for an adult and £4.55 for a child. If Hannah and her brothers Paul and Jack go with mum and dad, how much do they spend on tickets?