LO: To complete mixed questions using reasoning and problem solving (bronze).

1. These are the most popular dog profiles on Woofstagram. Put the profiles in order of most to least number of friends.

Patch 9,242,234 friends	Jones 9,305,183 friends	Barkley 9,242,499 friends	Spaghetti 9,928,372 friends
Blue 9,340,392 friends	Peanut 8,099,999 friends	Bartholomew 9,410,592 friends	Tiny 9,411,829 friends

2. You are making an order for the school's end of the year barbeque. There are 400 students attending. You must order enough food so each student can have a hotdog, hamburger and ice lolly, but most items are sold in packs so you may have extra. Which store should you get your supplies from to spend the least amount of money?

Item	Stop 'n' Shop	Snack Town	Gary's Groceries
Hot dogs	25 for £1.49	30 for £1.50	12 for 99p
Hot dog buns	10 for £1	12 for £1.25	11p each
Hamburgers	10 for £1.99	24 for £4.49	12 for £2.49
Hamburger buns	12 for £1	10 for 80p	24 for £1.49
Ice lollies	24 for £2.50	12 for £1	10 for £1

3. Leafy Grove Primary is planning a Walk-a-Thon to raise money for a local charity by completing laps around their football field.

Year Group	Students in class	Fundraising plan for each student	Number of laps completed per student	Total raised by class
Year 1	28	get £5 for every $\frac{1}{2}$ lap	9	
Year 2	26	£5 for every $\frac{3}{4}$ lap	15	
Year 3	27	£7 for every lap	15	
Year 4	23	£7 for every $1\frac{1}{4}$ lap	20	
Year 5	29	£11 for every $1\frac{3}{4}$ laps	21	
Year 6	22	£11 for every 2 laps	29	

How many laps does the average student complete? (Round to 2dp)

Which year group made the most money?

How much money does the school raise in total?

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Which year group made the most money?

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4. JoJo the clown is assessing his business plan. His accountant has suggested four new price schemes for him to consider with the following notes:
- He currently charges clients a flat rate of £20 per party, plus £24.50 per hour he performs.
- The minimum length of a booking must be 2 hours.
- Each party costs him an average of £130 in supplies and travel costs.

How many hours does he currently have to work to make a profit?

Which option will allow him to make the biggest profit for a shorter booking?

	Flat rate (m)	Cost per hour (n)	Minimum booking (m + 2n)	3 hour booking (m + 3n)	4 hour booking (m + 4n)
Option 1	33.99	26.50			
Option 2	34.99	25.50			
Option 3	42.99	27.50			
Option 4	39.99	24.50			

5. Martha wants to make some cookies for her mum's birthday party. She'd like to test the recipe first, but she only has 180g of butter, so she won't be able to make the full amount. How many cookies can she make with the ingredients she has in her pantry? Scale the recipe to show how much of each other ingredient she will need.

Ingredients for Chocolate Chip Celebration Cookies (makes 20)	Amended recipe (makes)
225g caster sugar	
200g butter	180g butter
300g flour	
1 teaspoon vanilla extract	
1 teaspoon baking powder	
1 egg	
150g chocolate chips	

5. Martha wants to make some cookies for her mum's birthday party. She'd like to test the recipe first, but she only has 180g of butter, so she won't be able to make the full amount. How many cookies can she make with the ingredients she has in her pantry? Scale the recipe to show how much of each other ingredient she will need.

Ingredients for Chocolate Chip Celebration Cookies (makes 20)	Amended recipe (makes)
225g caster sugar 200g butter 300g flour 1 teaspoon vanilla extract 1 teaspoon baking powder 1 egg 150g chocolate chips	180g butter

6. The cookies were a big success! Martha has finalised the guest list and is going to make 150 cookies for the party. How much of each ingredient does she need?

Ingredients for Chocolate Chip Celebration Cookies (makes 20)	Amended recipe (makes 150)
225g caster sugar 200g butter 300g flour 1 teaspoon vanilla extract 1 teaspoon baking powder 1 egg 150g chocolate chips	

She is going to buy some of her items in bulk. Which ingredients can she purchase in kilograms? Make the conversions, and round all decimals to two decimal points.

You need to arrange train and bus travel for 94 fans to the football stadium.

Train carriages seat 33 people and cost £54 per carriage or £2.50 per person.

    a) How much will your train journey cost?

The coaches seat 25 people and cost £57 each.

    b) How much will the coaches cost?

    c) What are your total travel costs?

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Spaghetti, Tiny, Bartholomew, Blue, Jones, Barkley, Patch, Peanut

2. You are making an order for the school's end of the year barbeque. There are 400 students attending. You must order enough food so each student can have a hotdog, hamburger and ice lolly, but most items are sold in packs so you may have extra. Which store should you get your supplies from to spend the least amount of money?

Item	Stop 'n' Shop	Snack Town	Gary's Groceries
Hot dogs	25 for £1.49	30 for £1.50 14 packs = £21.00	12 for 99p
Hot dog buns	10 for £1	12 for £1.25 34 packs = £42.50	11p each
Hamburgers	10 for £1.99	24 for £4.49 17 packs = £76.33	12 for £2.49
Hamburger buns	12 for £1	10 for 80p 40 packs = £32.00	24 for £1.49
Ice lollies	24 for £2.50	12 for £1 34 packs = £34.00	10 for £1

The items are the least expensive from Snack Town (£205.83).

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Year 2	26	£5 for every $\frac{3}{4}$ lap	15	£2,600
Year 3	27	£7 for every lap	15	£2,835
Year 4	23	£7 for every $1\frac{1}{4}$ lap	20	£2,576
Year 5	29	£11 for every $1\frac{3}{4}$ laps	21	£3,828
Year 6	22	£11 for every 2 laps	29	£3,509

How many laps does the average student complete? (Round to 2dp)	18.2 laps
Which year group made the most money?	Year 5
How much money does the school raise in total?	£17,868

LO: To complete mixed questions using reasoning and problem solving (silver)-answers

3. Leafy Grove Primary is planning a Walk-a-Thon to raise money for a local charity by completing laps around their football field.

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How many laps does the average student complete? (Round to 2dp)	18.2 laps
Which year group made the most money?	Year 5
How much money does the school raise in total?	£17,868

4. JoJo the clown is assessing his business plan. His accountant has suggested four new price schemes for him to consider with the following notes:
- He currently charges clients a flat rate of £20 per party, plus £24.50 per hour he performs.
- The minimum length of a booking must be 2 hours.
- Each party costs him an average of £130 in supplies and travel costs.

How many hours does he currently have to work to make a profit?	5 hours

Which option will allow him to make the biggest profit for a shorter booking?

Option 3 will make the most money over 4 hours.

	Flat rate (m)	Cost per hour (n)	Minimum booking (m + 2n)	3 hour booking (m + 3n)	4 hour booking (m + 4n)
Option 1	33.99	26.50	£86.99	£113.49	£139.99
Option 2	34.99	25.50	£85.99	£111.49	£136.99
Option 3	42.99	27.50	£97.99	£125.49	£152.99
Option 4	39.99	24.50	£88.99	£113.49	£137.99

5. Martha wants to make some cookies for her mum's birthday party. She'd like to test the recipe first, but she only has 180g of butter, so she won't be able to make the full amount. How many cookies can she make with the ingredients she has in her pantry? Scale the recipe to show how much of each other ingredient she will need.

Ingredients for Chocolate Chip Celebration Cookies (makes 20)	Amended recipe (makes 18)
225g caster sugar	202.5g caster sugar
200g butter	180g butter
300g flour	270g flour
1 teaspoon vanilla extract	0.9 teaspoon vanilla extract
1 teaspoon baking powder	0.9 teaspoon baking powder
1 egg	0.9 egg
150g chocolate chips	135g chocolate chips

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200g butter	180g butter
300g flour	270g flour
1 teaspoon vanilla extract	0.9 teaspoon vanilla extract
1 teaspoon baking powder	0.9 teaspoon baking powder
1 egg	0.9 egg
150g chocolate chips	135g chocolate chips

6. The cookies were a big success! Martha has finalised the guest list and is going to make 150 cookies for the party. How much of each ingredient does she need?

Ingredients for Chocolate Chip Celebration Cookies (makes 20)	Amended recipe (makes 150)
225g caster sugar	1,687.5g caster sugar
200g butter	1,500g butter
300g flour	2,250g flour
1 teaspoon vanilla extract	7.5 teaspoons vanilla extract
1 teaspoon baking powder	7.5 teaspoons baking powder
1 egg	7.5 eggs
150g chocolate chips	1,125g chocolate chips

She is going to buy some of her items in bulk. Which ingredients can she purchase in kilograms? Make the conversions, and round all decimals to two decimal points.

1.69kg caster sugar, 1.5kg butter, 2.25kg flour, 1.13kg chocolate chips

a) Train travel = £178
b) Coach travel = £228
c) Total travel = £406