Introduction

In Year 5 Addition and Subtraction, children build upon previous learning of formal written methods and gain fluency at using a range of strategies to solve mental calculations featuring large numbers. Children will begin to add and subtract whole numbers with more than 4 digits using columnar methods and continue to practice solving multi-step problems, deciding which operations and methods to use and why.
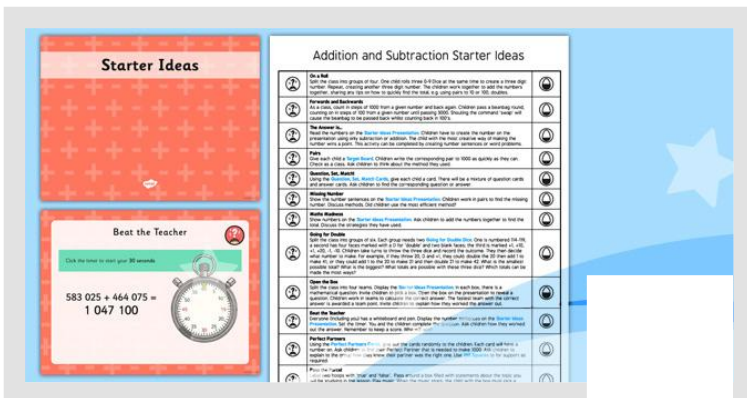
Resources

In addition to your standard maths resources you will need...
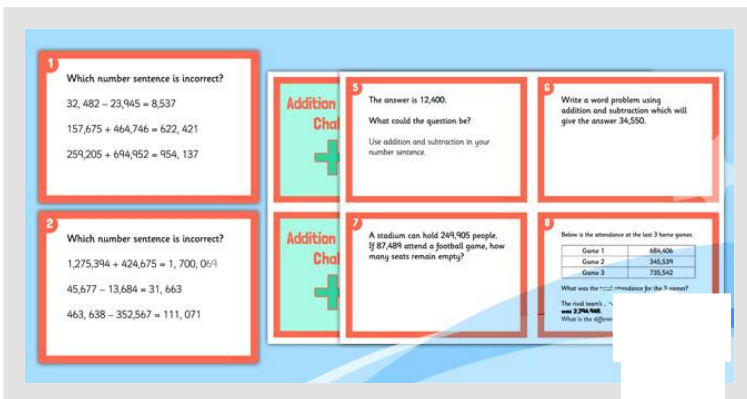

SolveIt Lesson Pack: Word Bank

Each letter of the alphabet has a value. Can children create a first name that is valued at exactly 50? Children solve the puzzle using addition and subtraction strategies.

Starter Ideas

Assessment Statements

By the end of these lessons...

...all children should be able to:

- add and subtract using a columnar method;
- add and subtract numbers with 4/5 digits;
- round numbers to the nearest 10, 100, 1000;
- use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy;
- choose a sensible way of calculating when solving a problem;
- solve one and two step word problems;
- choose appropriate methods for mental calculation;
- practice mental calculation with increasingly larger numbers.

...most children will be able to:

- add and subtract numbers with 5 + digits;
- round numbers to the nearest 10, 100, 100, 1000, 10 000;
- able to talk about how they solved a problem.

...some children will be able to:

- add larger numbers with decimal notation;
- round numbers to the nearest 10, 100, 1000, 10 000, 100 000;
- suggest alternate ways to solve puzzles/ problems.

Challenge Cards
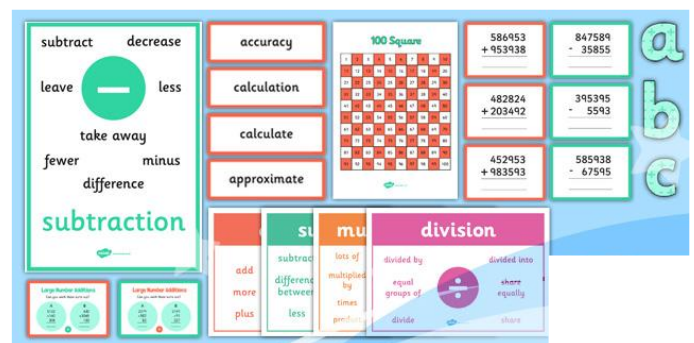
Display Pack

Lesson Breakdown

To add and subtract whole numbers with more than 4 digits using formal written methods.

Formal Written Methods (1): Word Mayhem
I can add whole numbers with up to 4 digits using a written method.

Formal Written Methods (2): Flying Machines
I can add whole numbers with more than 4 digits using a written method.

Formal Written Methods (3): Flying High
I can add whole numbers with more than 4 digits using a written method.

Formal Written Methods (4): Conquering Everest
I can subtract whole numbers with up to 4 digits using a written method.

Formal Written Methods (5): Soaring the Skies
I can subtract whole numbers with up to 4 digits using a written method.

Formal Written Methods (6): Playing with Numbers
I can subtract whole numbers with up to 4 digits using a written method.

Home Learning: The Answer Is...
This differentiated Home Learning Task asks children to create their own word problems to match given totals.

Add and subtract numbers mentally with increasingly large numbers.

Mental Calculations (1): What a Mess!
I can use a range of mental calculation strategies.

Mental Calculations (2): Number Battle
I can use mental calculation strategies to solve addition and subtraction problems.

Mental Calculations (3): Game On!
I can use mental calculation strategies to solve addition and subtraction problems.

Home Learning: Circles
Children complete the differentiated activity using mental strategies to fill in missing numbers.

Use rounding to check answers to calculations and determine, in context of a problem.

Rounding (1): Security Compromised
I can use a range of mental calculation strategies.

Rounding (2): Decorator's Nightmare
I can use mental calculation strategies to solve addition and subtraction problems.

Rounding (3): Checking In
I can use mental calculation strategies to solve addition and subtraction problems.

Home Learning: Rounding in a Row
In this Home Learning activity, children play a differentiated rounding game with a friend or family member.

Solve addition and subtraction multistep problems, deciding which operation and methods to use and why.

Solving Problems (1): Sweet Shop
I can select the correct operation to use and explain why.

Solving Problems (2): An Inspector Calls
I can select the correct operation to use and solve a problem.

Solving Problems (3): Treasure!
I can solve multi-step problems.

Home Learning: Problem Detective
Children create their own word problems to complete this differentiated Home Learning Task.

Mathematics Guide

What Goes into a PlanIt Lesson Plan?

Each lesson pack contains a lesson plan as a pdf document. Text can be copied from the plan to your own planning format. The lesson plan is split into four main sections to help with your planning.

Area Name

Lesson Name

Resources: Any resources you need will be listed here.

Preparation: Here you will find everything that needs preparing before the lesson.

Aim: The text in red is the 2014 NC aim the green text gives you a child friendly aim for the lesson.

You'll find Twinkl resources in blue and bold, hyperlinks are also underlined.

Learning Sequence: Takes you through the lesson step by step.

Our icons tell you the type of activity involved for each part of the lesson. You can find out more about these at the bottom of the page.

Prior Learning: Anything that would be helpful for the children to have already learnt will be noted here.

Differentiation is indicated by 1, 2 or 3 stars.

These titles in bold match the relevant slides in the lesson presentation.

You'll find key assessment opportunities in green in the learning sequence.

The egg timers tell you how long that part of the lesson should last; short, medium or long. If you don't have time for the full lesson, this might help you select individual parts.

Master*it*: This section gives you additional ideas as well as cross-curricular links that you could use to extend the lesson, to challenge individuals or plan another lesson.

Footer: This tells you which area the lesson comes from, where the lesson comes within the area, and if the lesson stands alone or is linked in a series with other lessons.

Maths | Year Group | Area of Mathematics | Aim | Lesson #of #: Lesson Name

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Lesson plan detail

Properties of Shapes: Describing 2D Shapes

Aim:
Draw 2D shapes and make 3D shapes using modelling materials; recognise 3D shapes in different orientations and describe them.
I can draw and describe 2D shapes.

Success Criteria:
I can name 2D shapes with 5, 6 and 8 sides.
I can draw 2D shapes.
I can describe the properties of different 2D shapes.

Resources:
Lesson Pack
Dice
Mini whiteboards and pens - class set

Key/New Words:
Pentagon, hexagon, octagon.

Preparation:
Differentiated Activity Sheet Drawing 2D Shapes per child
2D Shape Word Mat as required
2D Shape Word Mat Irregular and Different Orientations as required

Prior Learning: It will be helpful if children know the names of the common 2D shapes and have had experience describing and sorting them.

Learning Sequence

Shape Sort: First, Children individually sketch a 2D shape on whiteboards. Then, two sorting headings are shown on the **Lesson Presentation** which point to opposite sides of the classroom. Children move to the side of classroom which fits their shape. Quickly discuss the outcomes. Repeat on the next slide with two different headings.

Introducing More Shapes: Introduce the shapes pentagon, hexagon and octagon. As a class, match descriptions to the shape on the **Lesson Presentation.**

Secret Shapes: One partner secretly draws shapes on to their whiteboard to create a simple picture. They describe the position and properties of the shapes to their partner who tries to create the same picture using the information they are being given.

Drawing 2D Shapes: Children complete the differentiated **Drawing 2D Shapes Activity Sheets.**
★ Children trace and join the dots to draw 2D shapes and write the names underneath from word bank.
★★ Children draw the given 2D shapes into the correct box.
★★★ Children draw the given 2D shapes into the correct place in the Carroll Diagram.

Robot Roll & Race: Use individual whiteboards for this activity. The children take turns rolling a dice. On each roll everyone draws the corresponding shape for the robot whilst saying the shape name. The first group to complete drawing the robot shouts out 'robot!' and wins.

Shape Detective: Children work in pairs looking at the shape pictures on the **Lesson Presentation.** One child secretly selects one of the pictures. The other child asks questions using mathematical vocabulary to find out which of the pictures they are thinking of.

Master*it*
Paintit: Create painted pictures showing 2D shapes in imaginary scenes.
Bendit: As a PE warm up, use bodies in different ways to recreate shapes in small groups.
Pegit: Use peg boards and rubber bands to make a range of shapes and shape patterns.

Lesson Plan Icons

Duration of Activity	Short	Medium	Long

Differentiation	Low	Medium	High
	★	★★	★★★

Assessment — Or look for green text in the learning sequence.

Individual

Talk Partners

Pairs

Mental & Oral Starter

Group Work

Teacher Led

Whole Class
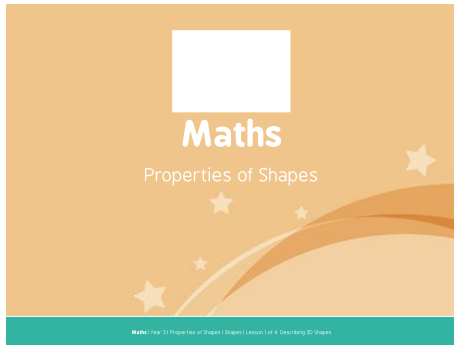
What Goes into a PlanIt Lesson Presentation?

Each lesson pack has a lesson presentation, available as a PowerPoint or interactive whiteboard file. The presentation frames the learning sequence as outlined on the lesson plan, providing information, posing questions and setting tasks.

Each presentation has the same 3 slides at the beginning;

Slide One: PlanIt title slide with the subject and the area title. The footer of the slide will match the lesson plan.
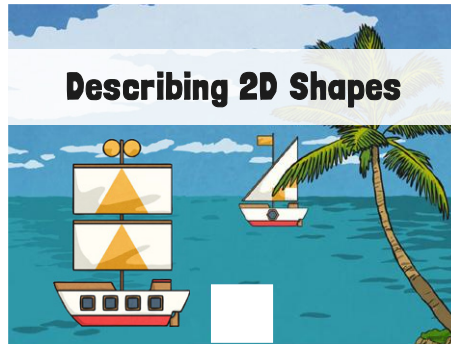
Slide Two: Child-friendly title slide. You might choose to start your lesson with this slide.

Slide Three: Child-friendly aim and success criteria.

Slide titles in the lesson presentation correspond with the bold titles in the learning sequence in the lesson plan.

You'll find the corresponding icon in the top right-hand corner. There is a key to the icons at the bottom of the page.

The success criteria slide will be repeated at the end of each presentation to facilitate assessment.

Lesson Presentation Icons

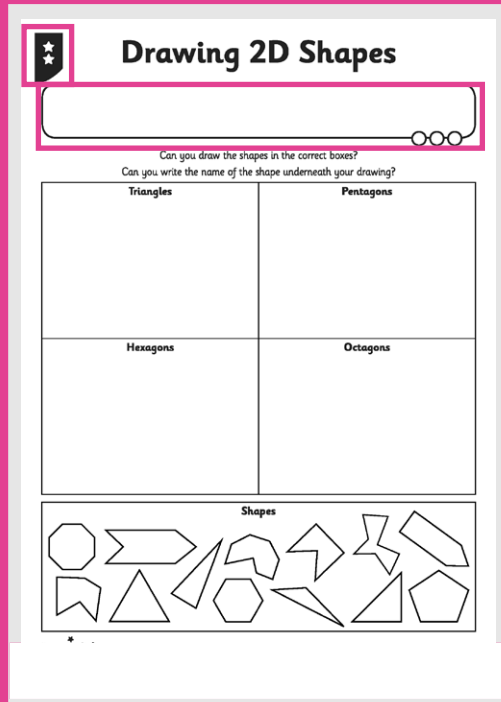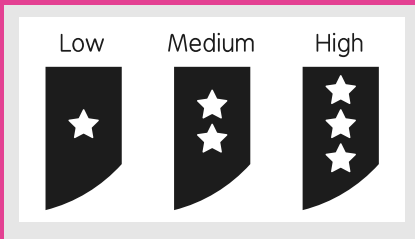|		
Individual	Group Work	Talk Partners	Assessment
Pairs	Whole Class	Mental & Oral Starter	

Our Activity Sheets

Our activity sheets are provided in .pdf format and .doc format.
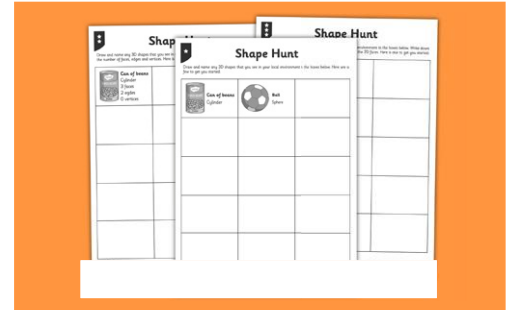
Differentiation is indicated by the star system.

This box is for the lesson aim. An editable version where you can add your own aim is also provided. The three circles are for optional self or teacher assessment

e.g. traffic light colours or shading 1, 2 or 3.

The footer will let you know which area and lesson the activity sheet is from.

Activity Sheet Icons

Low	Medium	High

Drawing 2D Shapes

Can you draw the shapes in the correct boxes?
Can you write the name of the shape underneath your drawing?

Triangles	Pentagons
Hexagons	Octagons

Shapes

Home Learning

For each curriculum aim, differentiated home learning activities are provided.

What's in a PlanIt Starter Ideas Pack?

Each area of mathematics features a PlanIt starter ideas pack, which has everything you need to teach a range of mental and oral starters for that area. Each starter that is included on a lesson plan in the area will be featured in this pack, giving you the option to substitute another starter from the area to suit your class, or a starter from another area altogether. Each starter ideas pack contains a starter ideas plan, a starter ideas presentation, and any other resources you might need to teach the starters in the pack.
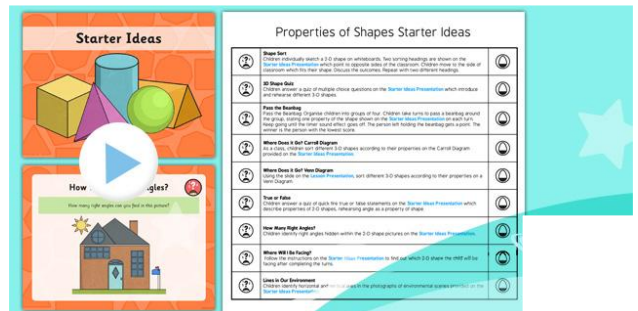
What Is a PlanIt SolveIt Lesson?

PlanIt SolveIt lessons have been devised to provide a problem solving lesson for each area of the mathematics curriculum. Each lesson is based on investigating a 'Big Question', providing engaging and accessible activities that encourage skills of using, applying and mathematical reasoning. SolveIt lessons are structured a little differently to other PlanIt lessons, following the structure of the problem solving process, allowing you the freedom to teach over a longer session or a number of sessions, as required. Each SolveIt lesson pack contains a lesson plan, a lesson presentation, and accompanying lesson resources.

The Big Question: Each of our SolveIt lessons is based around a 'Big Question' to focus the children's investigations on an open-ended and practical mathematics activity.

Beginning: Children are guided to discuss and understand the problem and to consider what information they already have and what they need to find out.

Exploring: Children carry out their plan, investigating and discussing possible outcomes.

Supporting and Extending: This section provides ideas for active differentiation so that the lesson is accessible and challenging for every child.

Preparing: Children devise a plan, discussing and choosing appropriate strategies.

Reviewing: Children look back at their work, what strategies were successful and what they have learnt.

Properties of Shapes: Tangram Triangles

Aim: Draw 2-D shapes. I can solve a tangram puzzle using 2-D shapes.	The Big Question: Can you find the twelve tangram triangles?	Resources: Lesson Pack
Success Criteria: I can name and draw 2-D shapes. I can describe the properties of different -2D shapes.	Key/New Words: Tangram.	Preparation: Tangram Square Resource Sheet per child Tangram Triangles Activity Sheet per child Tangram Triangles Clue Sheet as required

Learning Sequence

Beginning: The Tangram
Display the tangram square shown on the Lesson Presentation and discuss how the square has been divided into seven different shapes which can be arranged to make various other shapes. Using the Tangram Square Resource Sheet, children cut up the tangram puzzle and identify and describe the properties of the seven shapes with a talk partner. Confirm the identity and properties of the seven shapes using the summary included on the Lesson Presentation.

Preparing: Creating New Shapes
Discuss how the aim of the tangram puzzle is to rearrange the pieces of the square to create new shapes. Using the examples shown on the Lesson Presentation, children explore rearranging their own tangrams shapes into different triangles. Using the Lesson Presentation, introduce the challenge of finding all the different triangles that can be created using any arrangement of up to seven of the tangram shapes.

Exploring: Triangle Tangrams
Children investigate the twelve different triangles that can be made by using any arrangement of up to seven of the tangram shapes cut from the Tangram Square Resource Sheet. Children record the triangles as they make them on the Tangram Triangles Activity Sheet.

Reviewing: The Twelve Tangram Triangles
Share the answers with the children, discussing how many of the twelve triangles they found. Were some triangles harder to find than others? Discuss the properties of the different triangles created using the questions on the Lesson Presentation. How many triangles did we find which used 2.. 3.. 4.. 5.. 6.. 7 shape pieces? Are there any patterns to our findings? How many times did we use the square piece to help make a triangle? Do any of the triangles have a symmetrical pattern? Did the children notice anything else about the triangles they found?

Supporting
Encourage children to manipulate the shapes in different ways, rotating and flipping them as needed. If required, children may use the Triangle Tangrams Clues Sheet, which gives one or two pieces in each triangle as a starting point.

Extending
What other shapes can children make using the pieces of the Tangram Puzzle?

MasterIt
*Create*It: Investigate creating animal tangram pictures using this Animal Tangram Activity Booklet.
*Play*It: Solve a range of online Tangram Puzzles on the Museum of Play website.
*Puzzle*It: Create tangram puzzles for younger children to solve.

Additional SolveIt Lesson Icons

Supporting

Extending

Meet the Teacher Team Behind PlanIt

Leeanne
Experienced across the primary phase, Leeanne has an enthusiasm for literature and art. She is dedicated to promoting active and creative learning for children of all ages and abilities.

Nicola
With over 20 years' experience in teaching 5-11 year olds, Nicola now works as a specialist maths interventions teacher. She loves bringing enjoyment and fun to lessons, and helping children succeed with maths.

Helen
From an inner city school in London to a village school in Yorkshire, Helen is a former SENCo who has enjoyed 13 years teaching 6 to 11 year olds, focusing on a creative, cross curricular approach.

Hannah
With 11 years' experience as a primary teacher, Hannah enjoys teaching all subjects, but she particularly loves her specialist subject of music, and believes learning should always be fun.

Emma
Emma is an experienced primary teacher with an MA in Educational Leadership. She currently teaches a range of ages and enjoys creating exciting learning opportunities across the primary curriculum.

Helen
Helen is an experienced teacher, passionate about inspiring children through creative and engaging activities. She has enjoyed leading and developing specialisms in science, history and assessments.

Dawn
Before retiring from teaching after 34 years, Dawn's final role was associate headteacher of a multicultural school. She loves bringing fun into the classroom, especially through games and role play.

Beth
Beth has over 9 years teaching experience in primary schools. She has led PE and ICT and enjoys creating lessons which engage children and are enjoyable for children and teachers.

Sue
Sue has experience in teaching 5 to 14 year olds, in very small schools, larger primary and middle schools and in the independent sector. She has expertise in humanities and computing.

Andrew
Andrew has welcomed every challenge of being a classroom teacher, maths lead and SLT member for 12 years and never tires of inspiring new and enquiring minds.

Lisa
Lisa has over 8 years' experience teaching 7-11 year olds. She has been a designated Leader of Gifted and Talented, SENDCo and Humanities. She has a passion to instil a love of learning through challenging, enriching and innovative lessons.

Rebecca
Rebecca has experience teaching 5-7 year olds and prides herself on making learning fun, real and creative. She is leader of geography and computing and enjoys all aspects of the curriculum.
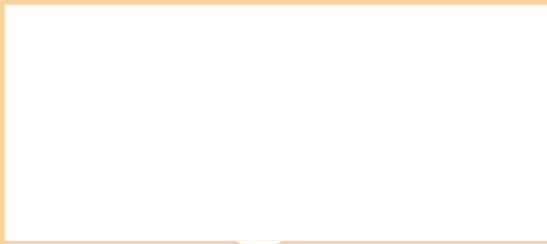
Be kind to yourself, you're doing wonderfully.
If you need us, just get in touch - contact

The Answer Is...

The answer is 7382. What could the question be?

1. Write 10 number sentences using addition and subtraction that would give the answer above. Use numbers that are at least 3 and 4 digits.

2. Write a word problem that would give the answer above.

The Answer Is...

The answer is 7382. What could the question be?

1. Write 10 number sentences using addition and subtraction that would give the answer above. Use numbers that are at least 3 and 4 digits.

2. Write a word problem that would give the answer above.

The Answer Is...

The answer is 7382. What could the question be?

1. Write 10 number sentences using addition and subtraction that would give the answer above. Use numbers that are at least 3 and 4 digits.

2. Write a word problem that would give the answer above.

The Answer Is...

The answer is 7382. What could the question be?

1. Write 10 number sentences using addition and subtraction that would give the answer above. Use numbers that are at least 3 and 4 digits.

2. Write a word problem that would give the answer above.

twinkl planit   **Maths** | Year 5 | Addition and Subtraction | The Answer Is...

twinkl planit   **Maths** | Year 5 | Addition and Subtraction | The Answer Is...

The Answer Is...

The answer is 12 549. What could the question be?

1. Write 10 number sentences using addition and subtraction that would give the answer above. Use numbers that are at least 4 and 5 digits.

2. Write a word problem that would give the answer above.

The Answer Is...

The answer is 12 549. What could the question be?

1. Write 10 number sentences using addition and subtraction that would give the answer above. Use numbers that are at least 4 and 5 digits.

2. Write a word problem that would give the answer above.

The Answer Is...

The answer is 12 549. What could the question be?

1. Write 10 number sentences using addition and subtraction that would give the answer above. Use numbers that are at least 4 and 5 digits.

2. Write a word problem that would give the answer above.

The Answer Is...

The answer is 12 549. What could the question be?

1. Write 10 number sentences using addition and subtraction that would give the answer above. Use numbers that are at least 4 and 5 digits.

2. Write a word problem that would give the answer above.

The Answer Is...

The answer is 148 394. What could the question be?

1. Write 10 number sentences using addition and subtraction that would give the answer above. Use numbers that are at least 5 and 6 digits.

2. Write a word problem that would give the answer above.

The Answer Is...

The answer is 148 394. What could the question be?

1. Write 10 number sentences using addition and subtraction that would give the answer above. Use numbers that are at least 5 and 6 digits.

2. Write a word problem that would give the answer above.

The Answer Is...

The answer is 148 394. What could the question be?

1. Write 10 number sentences using addition and subtraction that would give the answer above. Use numbers that are at least 5 and 6 digits.

2. Write a word problem that would give the answer above.

The Answer Is...

The answer is 148 394. What could the question be?

1. Write 10 number sentences using addition and subtraction that would give the answer above. Use numbers that are at least 5 and 6 digits.

2. Write a word problem that would give the answer above.