WINNING EDGE TECHNIQUES MATHEMATICS WORKBOOK1

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Other books in the series:

Winning Edge Maths Techniques:
A Step by Step Guide to Answering Questions Within A Tenth of the Time Allowed
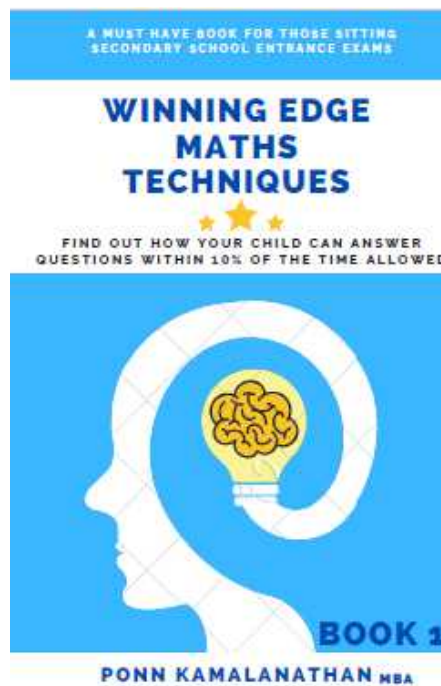
Book 1

- ✓ **A STEP BY STEP GUIDE TO ILLUSTRATE 'WINNING EDGE' TECHNIQUES AND TACTICS**

- ✓ **'POINTS TO REMEMBER' TO ELIMINATE CARELESS MISTAKES MADE BY STUDENTS.**

Timed Practice Questions

All questions are to be solved applying the "Winning Edge" Techniques illustrated in **WINNING EDGE MATHS TECHNIQUES** *Book 1*.

Q 1.   PLIGHT OF THE SALARYMAN

In February, Dwight saved 1/5th of his monthly salary and spent one quarter of it on rent. He spent what he had left of his salary that month on food & clothing. In March, he had a promotion which gave him a pay rise of 25% of his February salary. In March he spent the same amount of money on rent but managed to increase the monthly amount he saved by 10%. As a result, he saved £300 in March.

How much did Dwight spend on food and clothing in February?

Technique:

STEP1_____

STEP2_____

STEP3_____

   Answer: _____

Cross reference: Question No. 31 in **WINNING EDGE MATHS TECHNIQUES** *Book 1.*

Q 2.   HOW OLD ARE THE SISTERS?

How many times will a child's heart beat between 7:00pm and 12:00am if a child's heart beats 90 times per minute?

Technique:

STEP1_____

STEP2_____

STEP3_____

   Answer: _____

Cross reference: Question No. 7 in **WINNING EDGE MATHS TECHNIQUES** *Book 1.*

Q 3. HOW MANY GRAMS OF SUGAR?

Alice's recipe for cake is 270g of sugar mixed with 45g of cocoa. Alice used 72g of cocoa to make cake for her daughter's birthday. How much sugar would have been added by Alice to make that birthday cake?

Technique:

STEP1_____

STEP2_____

  Answer: _____

Cross reference: Question No. 55 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 4. HOW MANY SLICES WERE THERE?

A Pizza was shared in the following manner among Adam, John and June. One piece was left over.

  Adam ate $1/9$th, John ate $1/3$rd, June ate $1/2$.

How many slices of pizza were there?

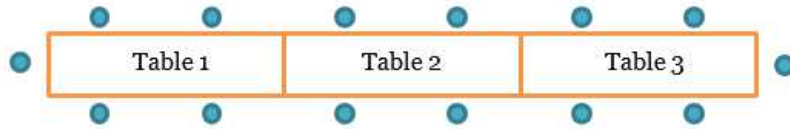**Technique:**

STEP1_____

STEP2_____

STEP3_____

  Answer: _____

Cross reference: Question No. 61in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 5.   HOW MANY RECTANGULAR TABLES ARE REQUIRED?

A rectangular table can seat 6 [1+2+2+1] people. How many of the rectangular tables put together to form a long rectangular table, as shown below, could seat 58 people?

Technique:

STEP1_____

STEP2_____

STEP3_____

   Answer: _____

Cross reference: Question No. 80 in **WINNING EDGE MATHS TECHNIQUES** *Book 1.*

Q 6.   RATIO OF MONEY AMONG THREE FRIENDS

Joy has 4/7th as much money as Molly. Molly has 1/4th as much money as Lilly. Write down the ratio of Joy's money is to Molly's money is to Lilly's money?

Technique:

STEP1_____

STEP2_____

STEP3_____

   Answer: _____

Cross reference: Question No. 82 in **WINNING EDGE MATHS TECHNIQUES** *Book 1.*

Q 7.   PREDICT THE AGE

Bernadette was one third of her brother's age in 2006. She was 13 years old in 2015. How old will her brother be in 2022?

Technique:

STEP1_____

STEP2_____

STEP3_____

STEP4_____

Answer: _____

Cross reference: Question No. 18 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 8.   WHAT IS THE AVERAGE MASS?

Five boys in school year 5 and ten girls in school year 4 have an average mass of three and one third stones. The average mass of five boys in school year 5 is four stones. Find the average mass of ten girls in school year 4?

Technique:

STEP1_____

STEP2_____

STEP3_____

STEP4_____

STEP5_____

Answer: _____

Cross reference: Question No. 12 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 9.   BREAKING THE (PIGGY) BANK

Jane emptied her piggy bank and found that she had equal number of 10 cents, 5 cents and 1 cent coins amounting to $4.80. How many coins were there altogether?

Technique:

STEP1_____

STEP2_____

STEP3_____

  Answer: _____

Cross reference: Question No. 14 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 10.   HOW MUCH DID THE TABLET COST?

The normal price of a laptop is £780. Mahdi was given a sale discount of 22%. How much does Mahdi pay for the laptop?

Technique:

STEP1_____

STEP2_____

STEP3_____

STEP4_____

STEP5_____

  Answer: _____

Cross reference: Question No. 21 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 11.   THREE SIBLINGS

The total of the ages of three siblings is 42 years. The second sibling's age is half of the eldest sibling and double of the third sibling. What is the age of the middle sibling?

Technique:

STEP1_____

STEP2_____

STEP3_____

> **Answer:** _____

Cross reference: Question No. 20 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 12.   A BEEPING ANSWERING MACHINE

An automated answering machine checks for missed calls every four minutes and voice messages every six minutes. It beeps every time when both are done at the same time. If it beeps at 1pm, how many more times will it beep over the next 30 minutes?

Technique:

STEP1_____

STEP2_____

STEP3_____

> **Answer:** _____

Cross reference: Question No. 8 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

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Q 13.   MORE THAN AND LESS THAN

An equality expression is   -9<y<7.

Which of the following options is the value of y in the above inequality expression?

   a) 9   b) -5   c) -9   d) -10   e) 7

Technique:

STEP1_____

STEP2_____

STEP3_____

        Answer: _____

Cross reference: Question No. 16 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 14.   WHAT WAS THE HEIGHT OF THE PLANT?

A plant grows by one fourth of its height every month. Its height today is 25 cm. What was its height a month ago?

Technique:

STEP1_____

STEP2_____

STEP3_____

        Answer: _____

Cross reference: Question No. 11 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 15.   WHAT ARE THE TWO CONSECUTIVE NUMBERS?

What the two consecutive numbers add up to 1527?

Technique:

STEP1_____

STEP2_____

STEP3_____

Answer: _____

Cross reference: Question No.96 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 16.   WHAT DAY WAS IT?

If the 9th January 2019 was a Friday, what day of the week was 7th February 2019?

Technique:

STEP1_____

STEP2_____

STEP3_____

STEP4_____

Answer: _____

Cross reference: Question No. 45 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 17. PLACE A BRACKET

$15 - 5 \times 2 + 4 = 6$

Place a bracket in the left hand side of the equation so that the answer becomes 24.

Technique:

STEP1_____

STEP2_____

      Answer: _____

Cross reference: Question No. 42 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 18. HOW MANY ARE IN NEITHER GROUP?

The SSS School of Science has 99 students. Out of 99 students, 36 are in maths & chemistry and 54 maths & physics.

If there are 6 students in both groups. How many are in neither groups?
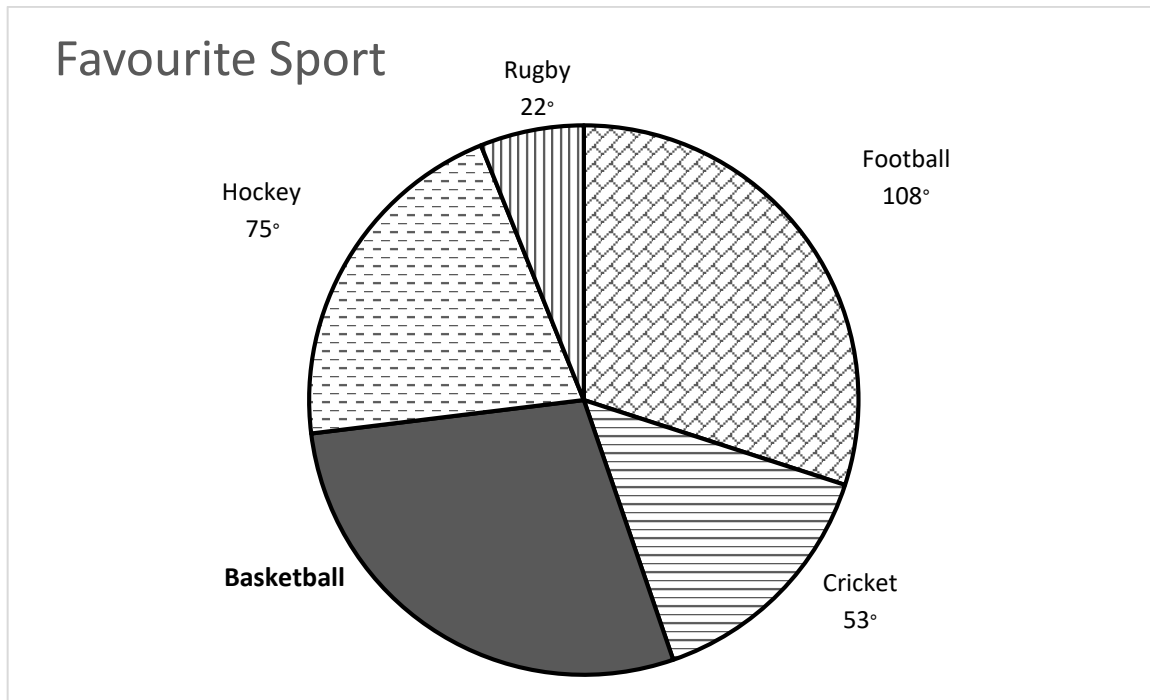
Technique:

STEP1_____

STEP2_____

STEP3_____

STEP4_____

      Answer: _____

Cross reference: Question No. 1 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 19. HOW MANY PREFER THAT COLOUR?

Favourite Sport

Rugby
22°

Football
108°

Hockey
75°

Basketball

Cricket
53°

This pie chart shows the favourite sport of 900 children, with the degrees on the pie chart represented by each sport also shown.

How many children like basketball (shaded in grey)?

Technique:

STEP1_____

STEP2_____

STEP3_____

Answer: _____
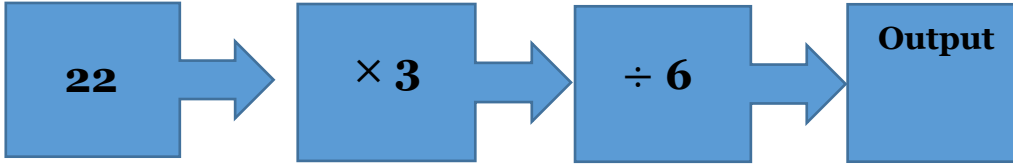
Cross reference: Question No. 2 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

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Q 20.   WHAT IS THE OUTPUT?

Solve the following number machine

| 22 | ➡ | × 3 | ➡ | ÷ 6 | ➡ | Output |

Technique:

STEP1_____

STEP2_____

Answer: _____

Cross reference: Question No.19 in **WINNING EDGE MATHS TECHNIQUES** *Book 1.*

Q 21.   WHAT IS THE PRICE OF CD & DVD?

Three CDs and four DVDs cost £77. Four CDs and three DVDs cost £63 .

What is the cost of one CD and one DVD?

Technique:

STEP1_____

STEP2_____

STEP3_____

Answer: _____

Cross reference: Question No. 13 in **WINNING EDGE MATHS TECHNIQUES** *Book 1.*

Q 22.   WHAT IS THE WEIGHT OF SUGAR IN THE CAKE?

A cake mixer is having flour, sugar and butter in the ratio 7:5:3. The weight of the cake when baked is 10.5 grams. What is the weight of sugar in the baked cake?

Technique:

STEP1_____

STEP2_____

STEP3_____

   Answer: _____

Cross reference: Question No. 15 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 23.   WHAT IS THE VOLUME?

The total surface area of a cube is 54cm^2. What is the volume of a cube?

Technique:

STEP1_____

STEP2_____

STEP3_____

   Answer: _____

Cross reference: Question No. 22 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 24.   WHAT IS a TO THE POWER q DIVIDED BY q?

If a=9 and q=3, what is $a^q \div q$?

Technique:

STEP1_____

STEP2_____

Answer: _____

Cross reference: Question No. 100 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 25.   WHAT IS THE LOWEST NUMBER OF MEN AND COWS?

A farmer looks from a distance at a field containing only men and cows. She counts the number of legs seen as 20. What could be the lowest total number of men and cows in that field?
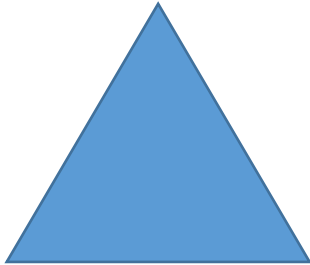
Technique:

STEP1_____

STEP2_____

STEP3_____

Answer: _____

Cross reference: Question No. 3 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 26. HOW MANY TILES ARE NEEDED?

How many small equilateral triangle-shaped tiles are needed to tile the large equilateral triangle?

Length: 5 metres   Length: 100 cm

Technique:

STEP1_____

STEP2_____

STEP3_____

STEP4_____

Answer: _____

Cross reference: Question No. 5 in **WINNING EDGE MATHS TECHNIQUES** *Book 1.*

Q 27.   WHAT IS THE DIFFERENCE IN VOLUME?

Listed below are the dimensions of two containers.

Container 1 measures 11cm × 7cm × 6cm

Container 2 measures 10cm × 7cm × 4cm

Calculate the difference in volume between containers 1 and 2.

Technique:

STEP1_____

STEP2_____

Answer: _____

Cross reference: Question No. 23 in **WINNING EDGE MATHS TECHNIQUES** *Book 1.*

Q 28.   WHAT IS THE AREA?

A piece of cardboard is 32.3cm wide and 54.2cm long.

What is the area in cm^2 of the cardboard?

A) 1763.65cm^2 B) 1811.31cm^2 C) 1751.10cm^2 D) 1750.66cm^2

Technique:

STEP1_____

STEP2_____

Answer: _____

Cross reference: Question No. 24 in **WINNING EDGE MATHS TECHNIQUES** *Book 1.*

Q 29. HOW MANY DESTINATIONS?

The Eurasian airways fly to 47 destinations and all these destinations are either in Europe or Asia.

The Eurasian airways have 13 more destinations in Asia than in Europe.

How many destinations do they have in Europe?

Technique:

STEP1_____

STEP2_____

     Answer: _____

Cross reference: Question No. 26 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 30. WHAT WAS THE PRICE OF THE LAPTOP?

Kiran bought a new laptop for £584 at a 20% off sale.

What was the original price of the laptop?

Technique:

STEP1_____

STEP2_____

     Answer: _____

Cross reference: Question No. 28 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 31. HOW MANY WEEKS IT WILL TAKE?

John receives £3.75 weekly as pocket money.

How many weeks does John have to collect his pocket money in order to purchase a camera for £149.99?

Technique:

STEP1_____

STEP2_____

STEP3_____

Answer: _____

Cross reference: Question No. 29 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 32. WHAT TIME WILL THE WATCH SHOW?

Jane's watch loses 20 seconds every half hour. If she sets the correct time at 9am, what time will her watch show at 7pm on the same day?

Technique:

STEP1_____

STEP2_____

STEP3_____

Answer: _____

Cross reference: Question No. 32 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

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Q 33.   CURRENCY EXCHANGE

Ichiro wanted to change 43750 Japanese Yen to British Pound Sterling at the local money changer where he saw the following on the electronic display:

1 Japanese Yen = 0.008 Euros

1 British Pound Sterling = 1.4 Euros

How many pounds did Ichiro receive?

Technique:

STEP1_____

STEP2_____

Answer: _____

Cross reference: Question No. 40 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 34.   FIND THE DEGREES?

A class of 27 students were asked to vote for their favourite teacher. The results were as follows:

Mr. Nigate: 6 Mrs. French: 12 Ms. Agarkar: 3   Mr. Ferdinand : 6

The Head teacher wants to make a pie chart from these results, but first asks one of the students to make a table, expressing each teacher voted for as a number of degrees on the pie chart.

Make the table for all the types of teachers in degrees (°)

Technique:

STEP1_____

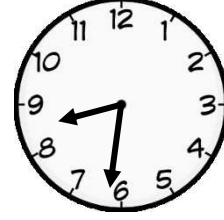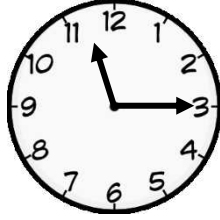**STEP2**_____

STEP3_____

Answer: _____

Cross reference: Question No. 37 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 35.   HANDS OF A CLOCK

Find the smaller angle between the hour and minute hands of the clock when the time is:

i)   11:15 pm

ii)   8:32 am

Technique:

STEP1_____

STEP2_____

Answer: _____

Cross reference: Question No. 10 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 36.   WHAT IS THE TOTAL LENGTH THE WORM TRAVELLED?

When a worm climbs 4cm, it slips 1cm.

If a worm has reached a height of 33cm above the ground, what is the total length it has travelled from the ground (including its slips) to reach 33cm?

Technique:

STEP1_____

STEP2_____

Answer: _____

Cross reference: Question No. 43 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 37. WHAT IS THE PERIMETER?
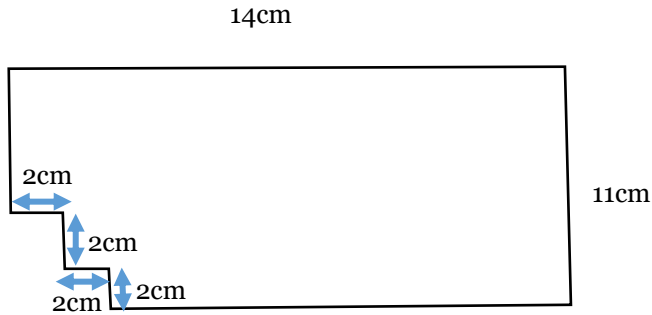
What is the perimeter of the above shape?

Technique:

STEP1_____

STEP2_____

   Answer: _____

Cross reference: Question No.56 in **WINNING EDGE MATHS TECHNIQUES** *Book 1.*

Q 38. WHAT IS THE WIDTH?

Two boxes have the same volume. The dimensions of one of the boxes is 7cm by 9cm by 6cm. The other box has a length of 4.5cm and a height of 12cm. What is the width of the second box?

Technique:

STEP1_____

STEP2_____

   Answer: _____

Cross reference: Question No. 58 in **WINNING EDGE MATHS TECHNIQUES** *Book 1.*

Q 39.   HOW MANY MATCHES?

PQR F.C. won 70% of their matches last year.

PQR F.C. also lost 6 matches and tied 3 matches in the same year.

How many matches did PQR F.C. play last year?

Technique:

STEP1_____

STEP2_____

Answer: _____

Cross reference: Question No. 99 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 40.   HOW MANY GAMES?

There are six teams (A, B , C , D, E , F) competing in a round robin tournament, with each team playing every other team once.

If there are no further games after the round robin, how many total games are played in the tournament?

Technique:

STEP1_____

STEP2_____

STEP3_____

Answer: _____

Cross reference: Question No. 97 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q. 41 HOW MANY?

How many two-digit numbers contain at least one 3?

Technique:

STEP1_____

STEP2_____

STEP3_____

Answer: _____

Cross reference: Question No. 62 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 42. HOW MANY MINUTES TO MEET UP?

Two boys, Rocky and Apollo, started to sprint at the same time from opposite ends of a track measuring 300m in length. In the first 6 seconds, Rocky sprinted 30m while Apollo had run 45m. In each subsequent 6 second interval both Rocky and Apollo each ran 5m less than the distance they had covered in the previous 6 second interval. How many minutes did it take for both to meet?

Technique:

STEP1_____

STEP2_____

Answer: _____

Cross reference: Question No. 64 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 43.   WHAT IS THE SIZE?

A 5 metre string is cut into three pieces, which are then sorted according to size.

The 2nd longest piece is 50cm shorter than the longest piece and 30cm longer than the shortest piece.

What is the size of the shortest piece?

Technique:

STEP1_____

STEP2_____

STEP3_____

       Answer: _____

Cross reference: Question No. 67 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 44.   WHAT IS THE PRICE?

Nine strawberry bars and two vanilla buttons cost $1.97. Each vanilla button costs 5 cents more than each strawberry bar. What is the price, in cents, of a vanilla button?

Technique:

STEP1_____

STEP2_____

STEP3_____

STEP4_____

       Answer: _____

Cross reference: Question No. 68 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 45.   THE WHAT IS PERIMETER?

The area of a rectangle garden is 54 square metres. The length of this rectangle is 3 metres more than its width.

What is the perimeter of this rectangle?

Technique:

STEP1_____

STEP2_____

         Answer: _____

Cross reference: Question No. 70 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 46.   FIND THE TOTAL LENGTH?

A cube has a surface area of 216 cm^2.

Find the total length of its edges.

Technique:

STEP1_____

STEP2_____

STEP3_____

         Answer: _____

Cross reference: Question No. 72 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 47. WHAT IS THE PRODUCT?

What is the product of the sum of 6 and 8 and the difference of 7 and 5?

Technique:

STEP1_____

STEP2_____

STEP3_____

Answer: _____

Cross reference: Question No. 75 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 48. WHAT IS HER POSITION?

Julia is standing in a queue of 37 people. What position is Julia in the queue, if there are 8 more people ahead of her than behind?

Technique:

STEP1_____

STEP2_____

STEP3_____

Answer: _____

Cross reference: Question No. 77 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

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Q 49.   WHAT IS THE MASS?

Two boys have an average mass of 39kg and the difference in mass between them is 13kg.

What is the mass of the boy with the heavier weight?

Technique:

STEP1_____

STEP2_____

STEP3_____

      Answer: _____

Cross reference: Question No. 81 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 50.   WHAT IS THE DISTANCE?

A sports venue has posts equally spaced from each other. The distance between the 3rd and 8th fence post is 55 metres. What is the distance between the 5th and 13th fence post?

Technique:

STEP1_____

STEP2_____

STEP3_____

      Answer: _____

Cross reference: Question No. 84 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 51.   HOW LONG WILL IT TAKE?

Sri and Adi are teenage twins living with their parents. Sri can wash & wax his dad's van in two hours and Adi can wash & wax the same van in 1 hour.

How long would it take for Sam and Adi to wash & wax the van together?

Technique:

STEP1_____

STEP2_____

STEP3_____

STEP4_____

Answer: _____

Cross reference: Question No. 85 in **WINNING EDGE MATHS TECHNIQUES** *Book 1.*

Q 52.   FIND THE TOTAL MONEY SPENT?

Four friends Paula(P), Adebola(A), Tami(T) and Dele(D) spent money on Easter shopping. When discussing how much they spent, they discovered the following:

P, A and T spent £135

A, T and D spent £140

P, T and D spent £120

P, A and D spent £115

Find out the total money spent by Paula and Thami?

Technique:

STEP1_____

STEP2_____

STEP3_____

STEP4_____

STEP5_____

Answer: _____

Cross reference: Question No. 88 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 53.   FIND THE LOWEST NUMBER?

Find the lowest number that includes 2, 4 and 5 as its factors?

Technique:

STEP1_____

STEP2_____

Answer: _____

Cross reference: Question No. 87 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 54. WHAT IS THE RATIO?

$1/3^{rd}$ of the worth of Pearline's Jewellery is equal to $1/4^{th}$ of the worth of Sarina's Jewellery. What is the ratio of the worth of jewellery of Sarina to Pearline?

Technique:

STEP1_____

STEP2_____

STEP3_____

    Answer: _____

Cross reference: Question No. 83 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 55. WHAT IS THE COST?

Four hats and three scarves cost £47. Three hats and four scarves cost £44. What is the cost of one hat?

Technique:

STEP1_____

STEP2_____

STEP3_____

    Answer: _____

Cross reference: Question No. 79 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 56.   HOW LONG TO COMPLETE THE JOURNEY?

Chen drives his truck for 50 minutes at a speed of 80 kilometres per hour. Marlo does the same journey at a speed of 40 kilometres per hour. How long did it take, in hours and minutes, for Marlo to complete the journey?

Technique:

STEP1_____

STEP2_____

   Answer: _____

Cross reference: Question No.76 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 57.   HOW MANY PUPILS?

In a school, class X has one and a quarter times more pupils than class Y. Class X has 23 girls. The number of boys in Class Y is one-third the number of boys in Class X. Class X has 12 boys. How many:

i) Pupils are in Class X   ii) Girls are in Class Y

Technique:

STEP1_____

STEP2_____

STEP3_____

   Answer: _____

Cross reference: Question No. 74 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

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Q 58.   FIND THE PERIMETER?

The ratio of width to length of a rectangle is 5:4 and its area is 720 cm^2.

Find, in cm, the perimeter of the rectangle.

Technique:

STEP1_____

STEP2_____

STEP3_____

STEP4_____

STEP5_____

   Answer: _____

Cross reference: Question No. 71 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 59.   HOW LONG DOES MARY TAKE?

Amy goes for a walk. She walks the first mile in 12 minutes. After the first mile, each mile takes one minute more than the time taken for the preceding mile.
How long does Mary take, in hours and minutes to walk 5 miles?

Technique:

STEP1_____

STEP2_____

STEP3_____

   Answer: _____

Cross reference: Question No. 69 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 60.   WHICH FRACTION IS THE NEAREST?

Which of the following numbers is nearest to 1:

$$\frac{15}{27}, \frac{27}{39}, \frac{39}{51}, \frac{51}{63}, \frac{63}{75}$$

Technique:

STEP1_____

STEP2_____

STEP3_____

    Answer: _____

Cross reference: Question No.63 in **WINNING EDGE MATHS TECHNIQUES** *Book 1.*

Q 61.   HOW LONG?

Six men take 18 hours to complete a task. How long will it take for nine men working at the same speed to complete the same task?

Technique:

STEP1_____

STEP2_____

    Answer: _____

Cross reference: Question No.33 in **WINNING EDGE MATHS TECHNIQUES** *Book 1.*

Q 62. <u>FIND THE DISTANCE?</u>

If a van travels 45 miles in 15 minutes, find the distance it travels in 55 minutes at the same speed?

Technique:

STEP1_____

STEP2_____

   Answer: _____

Cross reference: Question No.30 in WINNING EDGE MATHS TECHNIQUES *Book 1*

Q 63.   <u>WHICH IS THE CHEAPEST?</u>

A one litre can of pineapple costs $0.67 but a two litre can of pineapple is sold at $1.10 and a three litre can of pineapple is sold at $1.69.

Which one costs the least per litre of orange juice?

Technique:

STEP1_____

STEP2_____

STEP3_____

   Answer: _____

Cross reference: Question No. 27 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 64.   WHAT IS THE PERIMETER?

A rectangle has an area of 240m^2 and width of 15m.

What is the perimeter of the rectangle?

Technique:

STEP1_____

STEP2_____

      Answer: _____

Cross reference: Question No. 25 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 65.   FIND THE TOTAL NUMBER OF STUDENTS?

The following are the results of final year medical examinations at XYZ Medical School. 12 students achieved distinction in the clinical exam, 15 students achieved distinction in written theory exam and 9 students achieved distinction in both. Further, 99 students did not achieve distinction in either exam and 3 students did not sit for the examination due to mitigating circumstances.

Find the total number of final year students at XYZ Medical School?

Technique:

STEP1_____

STEP2_____

STEP3_____

      Answer: _____

Cross reference: Question No. 4 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 66.   WHAT ARE THE EVEN NUMBERS?

Two even numbers add together to give 738. What are these even numbers?

Technique:

STEP1_____

STEP2_____

STEP3_____

   Answer: _____

Cross reference: Question No. 9 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 67.   FIND THE MISSING NUMBER?

Each of the following calculators has the same number missing from all six boxes. Find the missing number.

$\square \div \square + \square = 6$

$\square \times \square + \square = 30$

Technique:

STEP1_____

STEP2_____

   Answer: _____

Cross reference: Question No. 47 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 68.   HOW MANY MARKS?

Full marks in a maths test is 125.

How many marks did John get if he got 64%?

Technique:

STEP1_____

STEP2_____

STEP3_____

    Answer: _____

Cross reference: Question No. 48 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 69.   FIND THE SPEED?

Keenan and Davinia are travelling back to their homes after finishing the year at university. It takes Keenan 1 hour 40 minutes to make the 81 km journey back home.

Davinia drives 18 km more than Keenan. It takes her 135 minutes to get home. Find Davinia's speed in km per hour.

Technique:

STEP1_____

STEP2_____

    Answer: _____

Cross reference: Question No. 50 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 70.   HOW MUCH DIESEL NEEDED?

The diesel tank of a van holds 90 litres. How much diesel needs to be put into the tank when it is $\frac{8}{36}$ full so that the diesel tank is filled up?

Technique:

STEP1_____

STEP2_____

STEP3_____

    Answer: _____

Cross reference: Question No.52 in **WINNING EDGE MATHS TECHNIQUES** *Book 1.*

Q 71.   WHAT IS THE PERCENTAGE INCREASE?

Thomas travels from Scotland to meet a friend. It takes him 135 mins to reach his destination.

On returning there are multiple disruptions during his journey, and it took Thomas three and a quarter hours to reach Scotland.

By what percentage increase, to three significant figures, is Thomas' return journey time.
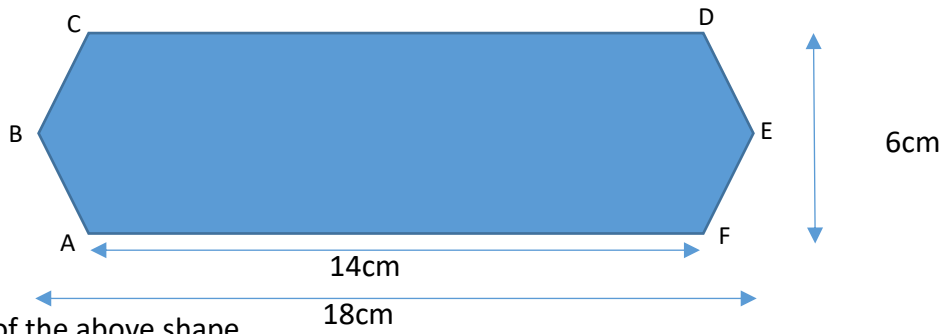
Technique:

STEP1_____

STEP2_____

STEP3_____

    Answer: _____

Cross reference: Question No. 51 in **WINNING EDGE MATHS TECHNIQUES** *Book 1.*

Q 72. <u>FIND THE AREA</u>

Find the area of the above shape.

Technique:

STEP1_____

STEP2_____

STEP3_____

STEP4_____

STEP5_____

    Answer: _____

Cross reference: Question No.46 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 73. **GAMESTATION**

GameStore and Games-Are-Us are competitors. Ramona visited both stores and fell in love with the new GameStation that was available in both of them.

Even though both stores offered a generous discount of 40% off their price, Ramona found that if she buys the GameStation from Games-Are-Us, she would pay $18 less than the discounted price at GameStore.

If the original price of that GameStation at Games-Are-Us is $450, what is the overall percentage discount from their original price GameStore should offer match the discounted price of Games-Are-Us?

Technique:

STEP1_____

STEP2_____

STEP3_____

    Answer: _____

Cross reference: Question No. 4 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 74. THE ALARM BELLS ARE RINGING

3 Reminder Alarms in a factory sound alarms at 4 minute, 6 minute and 9 minute intervals respectively. If all three alarms sounded alarms at 7.30am, how many times will all three alarms sound their alarms at the same time until 10:30am, including the initial alarm (at 7.30am).

Technique:

STEP1_____

STEP2_____

    Answer: _____

Cross reference: Question No.38 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 75.   WHAT IS THE TOTAL NUMBER OF POINTS?

In a competition, a team of 19 members had an average score of 6.7 points each. Calculate the total number of points scored.

Technique:

STEP1_____

STEP2_____

Answer: _____

Cross reference: Question No. 34 in **WINNING EDGE MATHS TECHNIQUES** *Book 1.*

Q 76.   HOW MANY DAYS?

Four men built a wall in 6 days. How many days would it have taken for six men to build the same wall?

Technique:

STEP1_____

STEP2_____

Answer: _____

Cross reference: Question No. 36 in **WINNING EDGE MATHS TECHNIQUES** *Book 1.*

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Q 77.   FIND THE MISSING NUMBERS?

The mean of the following six numbers is 5.5. If the mode is 6, find the missing three numbers.

4, 4, 6, ?, ?, ?

Technique:

STEP1_____

STEP2_____

STEP3_____

Answer: _____

Cross reference: Question No. 35 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 78.   WHAT IS THE PERCENTAGE INCREASE?

Jane sat her chemistry exam and scored 25 marks out of 90. She was allowed to re-sit the exam and on this occasion, she scored 55.

What is the percentage increase in her chemistry score?

Technique:

STEP1_____

STEP2_____

Answer: _____

Cross reference: Question No.53 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 79.   HOW MANY DIFFERENT HALF TIME SCORES?

Germany beat Spain 3-1 in a football match. How many different half time scores are possible?

Technique:

STEP1_____

STEP2_____

   Answer: _____

Cross reference: Question No. 57 in WINNING EDGE MATHS TECHNIQUES *Book 1.*
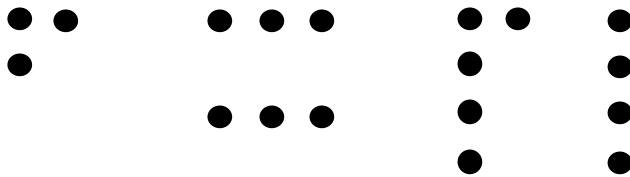

Q 80.   HOW MANY DOTS?

Diagram: 1   2   3

Find the number of dots in diagram number 7.

Technique:

STEP1_____

STEP2_____

STEP3_____

   Answer: _____

Cross reference: Question No.54 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 81. <u>NEW-AGE WEIGHING</u>

Three friends consulted a dietician together. They told the dietician that none of them wanted to disclose their individual mass to each other. The dietician abided to this request, but did so in an unusual manner, weighing 2 of them at a time. All 3 possible combinations of the friends were weighed.

The results are as follows:

<div align="center">147kg   /   141kg   /   138kg</div>

What is the combined mass of the lightest person and the second heaviest person?

Technique:

STEP1_____

STEP2_____

      Answer: _____

Cross reference: Question No. 59 in **WINNING EDGE MATHS TECHNIQUES** *Book 1.*

Q 82. <u>HOW MUCH IS IT?</u>

Jane and John organised a summer day out another 2 friends. Jane bought 4 lollies and 2 ice creams with 5 drinks for $9.32. John bought 3 lollies drinks and 5 ice creams with 2 drinks for $8.18.

What is the total cost of one lolly, one ice cream and one drink?

Technique:

STEP1_____

STEP2_____

STEP3_____

      Answer: _____

Cross reference: Question No. 65 in **WINNING EDGE MATHS TECHNIQUES** *Book 1.*

Q 83. COMPLETE THE LINE?

$3^2 + 3 + 4 = 16$

$4^2 + 4 + 5 = 25$

Complete the line commencing with: $12^2 + ? + ? = ?$

Technique

STEP1_____

STEP2_____

STEP3_____

Answer: _____

Cross reference: Question No 41. in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 84. HOW FAR?

Kwabena drives for two hours and twenty four minutes at an average velocity of 30 km/hour.

How far has Kwabena travelled?

Technique:

STEP1_____

STEP2_____

Answer: _____

Cross reference: Question No. 49 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

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Q 85. ECONOMIES OF SCALE

A company manufactured 3500 auto screws in the first 7 days. Due to integration of state of the art technology from the 8th day onwards, the company was able to manufacture 650 auto screws a day.

How many days in total would it have taken them to manufacture their first shipment of 10,650 auto screws?

Technique:

STEP1_____

STEP2_____

Answer: _____

Cross reference: Question No. 89 in **WINNING EDGE MATHS TECHNIQUES** *Book 1.*

Q 86. HOW MANY PIGS AND GOATS?

In a farm there are only pigs and goats in the ratio of 3:4.

A goat eats 5lbs of food every day and a pig eats 7lbs. The farmer says all his animals have eaten 697lbs of food today. How many goats and pigs are in this farm?

Technique:

STEP1_____

STEP2_____

STEP3_____

Answer: _____

Cross reference: Question No. 66 in **WINNING EDGE MATHS TECHNIQUES** *Book 1.*

Q 87.   HOW MANY HOURS?

Iroh and his friend Mei plan to meet each other between City P and City Q. Iroh leaves City P and Mei leaves City Q at 10am.

During the first hour of their journeys, Iroh starts his journey towards City Q at an average velocity of 40mph and at the same time Mei starts her journey towards City P at an average velocity of 60mph.

In each subsequent hour, both Iroh and Mei travel 5 mph less than their velocity the previous hour.

If the distance between City P and City Q is 450km, in how many hours will they met each other?

Technique:

STEP1_____

STEP2_____

STEP3_____

STEP4_____

   Answer: _____

Cross reference: Question No. 90 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 88. THE GOLF TOURNAMENT

A golf tournament is played between students at 4 Schools: Schools W, X, Y and Z. School W had 5 more players in the tournament than School X. School X had 2 fewer players than School Y, which had 1 fewer player than School Z.

The maximum number of players that a school could field was the second lowest double digit prime number. What is the highest possible total number of players that played in the tournament?

Technique:

STEP1_____

STEP2_____

STEP3_____

Answer: _____

Cross reference: Question No. 34 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 89. HOW MANY COINS?

You have a collection of only 10p, 2p and 1p coins. You have twice as many 2p coins as you do have 10p coins and have twice as many 1p coins as you do have 2p coins

If your collection totals £3.60 in value, how many coins do you have?

Technique:

STEP1_____

STEP2_____

STEP3_____

Answer: _____

Cross reference: Question No. 78 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 90. <u>FIND THE VALUES?</u>

a × b = 2,   b × c = 32,   c × a = 4.

a, b and c are all positive numbers. Find the value of a, b and c.

Technique:

STEP1_____

STEP2_____

STEP3_____

STEP4_____

STEP5_____

      Answer: _____

Cross reference: Question No. 73 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

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Q 91.   HOW MUCH SMALLER?

P, Q and R are jars of varying volumes.

The capacity ratio of Jar P to Jar Q is 3:5.

The capacity ratio of Jar Q to Jar R is 2:7.

How many times smaller is Jar P than Jar R?

Technique:

STEP1_____

STEP2_____

Answer: _____

Cross reference: Question No. 91 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 92.   FIND THEIR AGES?

Grace is 4 years older than her sister Josie. In 3 years' time Josie will be 5/6 as old as Grace. Find the sum of their ages at present?

Technique:

STEP1_____

STEP2_____

STEP3_____

STEP4_____

STEP5_____

Answer: _____

Cross reference: Question No. 92 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 93.   THE TALE OF THE BRIDE AND GROOM

A bride and groom as well as their families travel from Peterborough to London. Their families left Peterborough by coach at 12 noon and the bride and groom left by limousine, from the same location, at 12:30pm.

Despite the coach starting earlier, the limousine overtook the coach at 1:30pm. The limousine was able to reach London at 2:30pm.

Assuming the limousine and coached travelled at a constant average speed throughout the whole journey, what time did the coach reach London?

Technique:

STEP1_____

STEP2_____

STEP3_____

      Answer: _____

Cross reference: Question No. 93 in WINNING EDGE MATHS TECHNIQUES *Book 1.*

Q 94.   A MATTER OF 5s AND 20s

Zuhrah was given a cash present for her birthday by her grandmother. The cash consisted only of £5 and £20 notes, which Zuhrah noted were in the ratio of 5:4.

Jade visited the bank and changed 4 of the £20 notes she was given into £5 notes. Jade noted that the ratio of the number of £5 notes to the number of £20 notes was now 3:4.

How much did Zuhrah's grandmother give Zuhrah for her birthday?

Technique:

STEP1_____

STEP2_____

STEP3_____

STEP4_____

STEP5_____

STEP6_____

Answer: _____

Cross reference: Question No. 8 in WINNING EDGE MATHS TECHNIQUES *Book 1*

Q 95.   WHAT DID SHE EARN?

Aderonke worked in October and saved, expressed in decimal form, 0.38 of her wages. She gave 0.33 of her wages to her parents and further 0.04 to charity. She used the rest for herself. If she spent $450 on herself, how much was her wage in October?

Technique:

STEP1_____

STEP2_____

STEP3_____

Answer: _____

Cross reference: Question No. 95 in WINNING EDGE MATHS TECHNIQUES *Book 1*

Q 96. CHASING JAGBIR

Jagbir and Ruchika started the same journey at 10 am from Mumbai and each drove at constant, albeit different, velocities to reach the same destination.

When Jagbir completed 2/5 of her journey, Ruchika was 3 kilometres behind. Jagbir reached the destination 25 minutes before Ruchika.

What was the velocity, in kilometres per hour, that Ruchika drove at?

Technique:

STEP1_____

STEP2_____

STEP3_____

Answer: _____

Cross reference: Question No. 6 in WINNING EDGE MATHS TECHNIQUES *Book 1*

Q 97. JASMINE AND FRANCESCA

Jasmine and Francesca are friends. One day, they decide to go on a shopping trip together. After Jasmine spent £70 on a pair of shoes, she had half the amount of money Francesca had. Thereafter, Jasmine met her mum while shopping and received further £100. Meanwhile, Francesca spent £45 on a top. After their shopping trip, they decided to have lunch.

Upon counting their monies prior to having lunch, they found Jasmine had three times as much money as Francesca. How much money did Jasmine have at the start of the shopping trip?

Technique:

STEP1_____

STEP2_____

STEP3_____

STEP4_____

Answer: _____

Cross reference: Question No. 97 in WINNING EDGE MATHS TECHNIQUES *Book 1*

Q 98.   SCHOOL ASSEMBLY

In a school assembly, there are 45 more boys than girls. After the first session, 2/5 of the boys and 15% of the girls leave to their classrooms. There are now 8 more girls than boys in the assembly. How many pupils were there at the start of the assembly?

Technique:

STEP1_____

STEP2_____

STEP3_____

STEP4_____

STEP5_____

STEP6_____

   Answer: _____

Cross reference: Question No. 98 in **WINNING EDGE MATHS TECHNIQUES** *Book 1*

Q 99.   MARBLES GALORE

Sathya has 8/10ths the number of marbles that Pinky does. But Sathya has 1 1/2 times more marbles than Jacinda. Sathya, out of compassion, gives 10 marbles to Jacinda and discovers that he now has 4 fewer marbles than her. How many total marbles initially did Sai and Pinky have?

Technique:

STEP1_____

STEP2_____

STEP3_____

STEP4_____

   Answer: _____

Cross reference: Question No. 39 in **WINNING EDGE MATHS TECHNIQUES** *Book 1*

Q 100. THE EBBS AND FLOWS OF PAPER CLIP COLLECTING

Chandler and Joey together had 71 paper clips. Chandler's collection of paper clips increased by 40% after his friend Monica gave him a few more. Joey dropped his paper clip case in to a puddle and found that he had lost 5 paper clips. After this, the ratio of the paper clips Chandler and Joey had was 7:6. What is the number of paper clips Chandler and Joey each had at the start?

Technique:

STEP1_____

STEP2_____

STEP3_____

STEP4_____

STEP5_____

Answer: _____

Cross reference: Question No. 17 in **WINNING EDGE MATHS TECHNIQUES** *Book 1*

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Answers

1. £750
2. 27000 times
3. 432g
4. 18 slices
5. 14 tables
6. 4:7:28
7. 28
8. 3 stones
9. 90 coins
10. £686.40
11. 12 years old
12. Twice
13. B
14. 20
15. 763 and 764
16. Saturday
17. $(15 - 5) \times 2 + 4$
18. 15
19. 255°
20. 11
21. £20
22. 3.5g
23. 27cm^3
24. $3^5 = 243$
25. 8
26. 25
27. 182cm^2
28. 1750.66 cm^2
29. 17
30. 730
31. 40 weeks
32. 6:53pm
33. £250
34. Mr. Nigate: 80°, Mrs. French: 160°, Ms. Agarkar: 40°, Mr. Ferdinand: 80°
35. i) 106.5° ii) 18°+30°+12°=60°
36. 55cm
37. 50cm
38. 7cm
39. 30
40. 15
41. 18
    (13,23,30,31,32,33,34,35,36,37,38,39,43,53,63, 73,83,93)
42. 36 seconds
43. 130cm
44. 22 cents
45. 30m
46. 72cm
47. 28
48. 23rd
49. 45.5kg
50. 88m
51. 40 minutes
52. £85
53. 20
54. 4:3
55. Hat = £8, Scarves = £5
56. 1 hour 40 minutes
57. i) 35 ii) 24
58. 108cm
59. 1 hour 10 minutes
60. $\frac{63}{75}$
61. 12 hours
62. 165 miles
63. 2 litre can
64. 62m
65. 120
66. 368 and 370
67. 5
68. 80
69. 44 kph
70. 70 litres
71. 44.4%
72. 96cm^2
73. 40% + 4% = 44%
74. 6
75. 127.3
76. 4 days
77. 6,6,7
78. 120%
79. 8 possible half time scores
80. 21
81. 138kg
82. $2.50
83. 12^2 + 12 + 13 = 169
84. 72km
85. 18 days
86. 51 pigs, 68 goats
87. 6 hours
88. 62 players
89. 140
90. a = 0.5, b = 4, c = 8
91. 6/35ths smaller
92. 38
93. 3pm
94. £960
95. $1800
96. 18kph
97. £117
98. 325 pupils
99. 108 marbles
100. Chandler = 30 marbles. Joey = 41 marbles.