## Monday

1) Draw a rectilinear shape that has a perimeter of 32 cm . The shape must only be made up of two rectangles.
Find 3 possible solutions.
Find a fourth possibility that uses three or more rectangles.
2) Look at the shape below. It has been created using four rectangles, each with a width of 4 cm . The length of each rectangle is 6 times the width.
What is the perimeter of the square inside?


Answers below

1) a) Multiple answers are possible. Here are three possible solutions (not to scale).

b) Multiple answers are possible. Here are two possible solutions (not to scale).

2) The width of each rectangle is 4 cm .

To find the length of one rectangle, we multiply 4 cm by $6: 4 \mathrm{~cm} \times 6=24 \mathrm{~cm}$

To find the length of one of the sides of the square inside, we subtract the width of one rectangle from the length of one rectangle: $24 \mathrm{~cm}-4 \mathrm{~cm}=20 \mathrm{~cm}$
$20 \mathrm{~cm} \times 4=80 \mathrm{~cm}$

The square inside the shape has a perimeter of 80 cm .

## Tuesday

1) Mrs Smith multiplied a two-digit number by 10. My answer was a multiple of 7. My original number had fewer than 6 tens. Shade Mrs Smith's possible calculations on this grid.

| $7 \times 10$ | $21 \times 10$ | $35 \times 10$ | $32 \times 10$ |
| :---: | :---: | :---: | :---: |
| $65 \times 10$ | $14 \times 10$ | $63 \times 10$ | $84 \times 10$ |
| $28 \times 10$ | $40 \times 10$ | $49 \times 10$ | $36 \times 10$ |
| $77 \times 10$ | $42 \times 10$ | $70 \times 10$ | $24 \times 10$ |

2) One of Mrs Smith's possible calculations is missing from this grid. Can you find the missing calculation?
3) Mrs Smith then multiplied a three-digit whole number by 10. My threedigit number was an odd number. It had a hundred digit that was a multiple of 3 and a ten digit that was either a 0 or 5 . What could the original calculation have been? Can you find all of the possible answers? One example has been done for you.
$301 \times 10=3010$

## Answers below

1. 

| $7 \times 10$ | $21 \times 10$ | $35 \times 10$ | $32 \times 10$ |
| :---: | :---: | :---: | :---: |
| $65 \times 10$ | $14 \times 10$ | $63 \times 10$ | $84 \times 10$ |
| $28 \times 10$ | $40 \times 10$ | $49 \times 10$ | $36 \times 10$ |
| $77 \times 10$ | $42 \times 10$ | $70 \times 10$ | $24 \times 10$ |

2. $56 \times 10=560$
3. 

The hundreds digit could be a 3, 6 or 9 . The tens digit could be a 0 or 5. The ones digit could be a 1, 3, 5, 7 or 9. In total, there are 30 possible calculations and answers.

| $301 \times 10=3010$ | $351 \times 10=3510$ | $601 \times 10=6010$ | $651 \times 10=6510$ | $901 \times 10=9010$ | $951 \times 10=9510$ |
| :---: | :--- | :--- | :--- | :--- | :--- |
| $303 \times 10=3030$ | $353 \times 10=3530$ | $603 \times 10=6030$ | $653 \times 10=6530$ | $903 \times 10=9030$ | $953 \times 10=9530$ |
| $305 \times 10=3050$ | $355 \times 10=3550$ | $605 \times 10=6050$ | $655 \times 10=6550$ | $905 \times 10=9050$ | $955 \times 10=9550$ |
| $307 \times 10=3070$ | $357 \times 10=3570$ | $607 \times 10=6070$ | $657 \times 10=6570$ | $907 \times 10=9070$ | $957 \times 10=9570$ |
| $309 \times 10=3090$ | $359 \times 10=3590$ | $609 \times 10=6090$ | $659 \times 10=6590$ | $909 \times 10=9090$ | $959 \times 10=9590$ |

## Wednesday

1) Mrs Smith multiplies a whole number by 100. My answer has four digits. The sum of the digits is 15 . What could Mrs Smith's original number and calculation have been? How many possible answers could there have been?
2) Abe multiplied a whole 2-digit number by 100 . His number was an even number and a multiple of 7 . What could the original calculation have been? How many possible answers could he get?
3) A school field has a perimeter of 46 m . What is the length of the missing side? Give your answer in centimetres.


Answers below

1) $96 \times 100=9600$
$87 \times 100=8700$
$78 \times 100=7800$
$69 \times 100=6900$
2) The ones digit could be a $0,2,4,6$ or 8 . In total, there are 7 possible combinations and answers.

| $14 \times 100=1400$ | $70 \times 100=7000$ |
| :---: | :---: |
| $28 \times 100=2800$ | $84 \times 100=8400$ |
| $42 \times 100=4200$ | $98 \times 100=9800$ |
| $56 \times 100=5600$ |  |

3) The missing side is 11 m .
$46-12-12=22$
$22 \div 2=11$
$111 m=1100 \mathrm{~cm}$

## Thursday


1)

The Nadin family were comparing their ages.
Ben's age is a whole number and is ten times smaller than Olivia's age.
Dad is half of Grandad's age.
Olivia's age is ten times smaller than Grandad's age.
Jack's age is ten times smaller than Dad's age.

I am between 80 and 110 years old.

How old is each member of the family?

2)

Mia and Jacob are dividing numbers by 10.


When I divide my number by 10 and divide it by 10 again, I get a whole number greater than 10 and less than 20.


What starting numbers could the children be using? How many possibilities can you find?

## Answers Below

1) If any age other than 100 is selected for Grandad, olivia's age will not be a whole number of years. Grandad: 100 years old Olivia: 10 years old
Dad: 50 years old
Ben: 1 year old
Jack: 5 years old
2) If the Mia was using the number 1100, they would get the answer 11.

If Jacob also used 1100, they would get the answer 110.
Therefore, the following starting numbers are possible: 1100, 1200, 1300, 1400, 1500, 1600, 1700, 1800 and 1900.

