



## 11+ Maths Booklet 25

Name:

Date started:

- Try to work neatly
- Ask for help if you get stuck
- Show how you got your answers

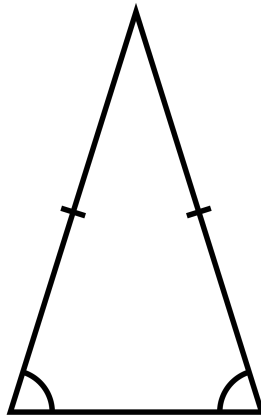
	Section A	Section B	Section C
WM65.7: Investigating Properties of Shapes	/10	/10	/10
WM612.11: Calculating Fractions, Decimals and Percentages	/10	/10	/10
WM61.11: Numbers and the Number System	/10	/10	/10
WM613.3: Solving Equations and Inequalities	/10	/10	/10

# Investigating Properties of Shapes

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- Work neatly and write all answers in the space provided
  - Try to have a go at each question
  - Make sure you show your working out
- 

## Section A - Practice



1. What do the dashes on the sides of the triangle demonstrate?

.....

2. One of the angles demonstrated on the diagram is  $23^\circ$  what is the size of the other angle shown on the diagram above?

.....

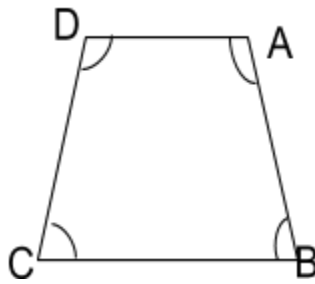
3. What type of triangle is this? Explain your answer.

.....

4. Draw an isosceles triangle with the angles  $25^\circ$  and  $130^\circ$  and label the remaining angle.

5. Draw an isosceles triangle with the angles 10 and 160 and label the remaining angle.

6. Draw an irregular decagon.



7. If angle A=116°, angle B= 131, angle C =69° what is the size of angle D?

.....

8. If angle A =83°, angle B =82°, angle C 114° what is the size of angle D?

.....

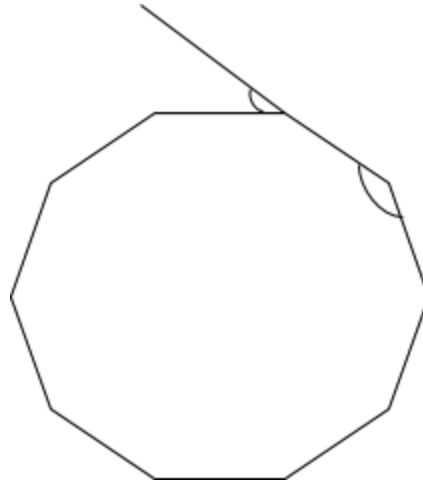
9. If angle A=65°, angle B=79°, angle C 119° what is the size of angle D?

.....

10. If angle A =75°, angle B = 109°, angle D 109° what is the size of angle C?

.....

Section B - Thinking about it



1. What shape is this?

.....

2. What is the size of the interior angle?

.....

3. What is the size of the exterior angle?

.....

4. What is the sum of the interior angles?

.....

5. Draw and label an exterior angle?

.....

6. How many lines of symmetry does this shape contain?

.....

7. What is a polygon?

.....

8. How would you describe a line of symmetry?

.....

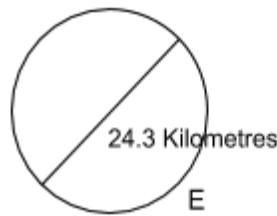
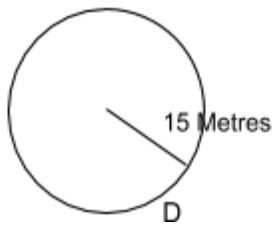
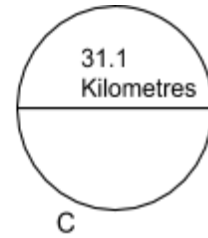
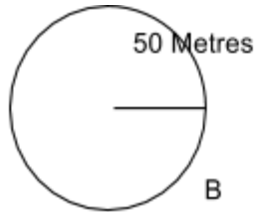
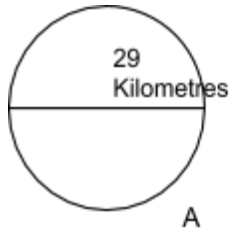


9. Is the above a right angle, greater than a right angle or less than a right angle?

.....

10. What is the reflex angle in the diagram above?

.....



11. What is the circumference of circle A?

.....

12. What is the diameter of circle B?

.....

13. What is the radius of circle C?

.....

14. What is the diameter of circle D?

.....

15. What is the radius of circle E?

.....

16. What is the area of circle A?

.....

17. What is the total area of circle B ?

.....

18. What is the total area of circle C?

.....

19. What is the circumference of circle E?

.....

20. Subtract the circumference value of circle B from circle D ?

.....

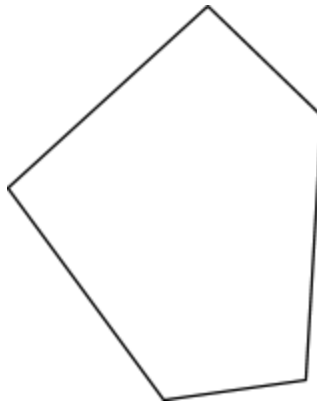


### Section C - Extended practice

1. What is the name of a polygon with 7 sides?

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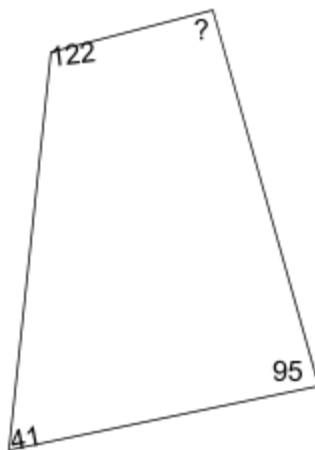
2. Name the shape below and split it into triangles by drawing on the diagram?



.....

3. How many triangles are present within this shape?

.....

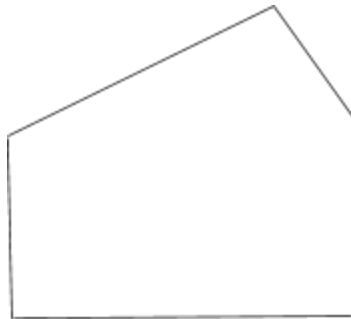


4. What is the size of the angle in the diagram above?

.....

5. Is rotational symmetry the same as reflection symmetry ?

.....



6. What type of shape is this?

.....

7. How many triangles make up this shape?

.....

8. What is the sum of the angle measures in this shape?

.....

9. A Jacuzzi has an area  $9\text{m}^2$ , it is circular what is the diameter of the jacuzzi?

.....

10. Penny wants to make a bigger jacuzzi. If the radius of Penny's jacuzzi is  $1\text{m}$  will it be bigger or smaller?

.....

Well done! Now go back and check your answers



# Calculating Fractions, Decimals and Percentages

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- Work neatly and write all answers in the space provided
  - Try to have a go at each question
  - Make sure you show your working out
- 

## Section A - Practice

1.  $1/5 + 5/25 - 1/5 =$

.....

2.  $1/6 + 3/12 + 6/36 =$

.....

3.  $5/100 + 4/25 =$

.....

4.  $1/4 + 4/400 =$

.....

Convert these fractions to decimals:

5.  $13/20$

.....

6.  $21/20$

.....

7.  $1/20$

.....

8.  $47/25$

.....

Convert these percentages to fractions:

9. 26.3%

.....

10. 143%

.....



## Section B - Thinking about it

1. Sandy did  $\frac{7}{10}$  of a load of laundry on Sunday,  $\frac{1}{10}$  of a load of laundry on Monday and  $\frac{7}{10}$  of a load on Wednesday. How many loads of laundry did Sandy do in total?

.....

2. Joan completed  $\frac{4}{9}$  of Friday's crossword,  $\frac{5}{9}$  of Wednesday's crossword and  $\frac{7}{9}$  of Thursday's crossword. Joan also did  $\frac{4}{9}$  of the jumble puzzle. In total, what fraction of these crosswords did Joan finish?

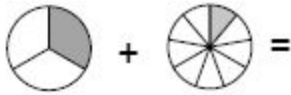
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3. At a local department store, sweaters are typically priced at \$31. Due to a special, the sweaters are reduced to 61.3% of their original price. How much are sweaters now? Round your answer to the nearest whole number if necessary.

.....

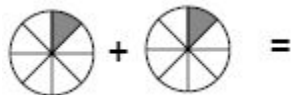
Write the fraction values below each of the following shapes, then complete the sums. If a top heavy fraction results, then give the answer as a mixed number.

4.



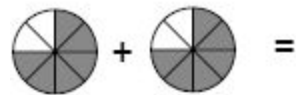
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5.



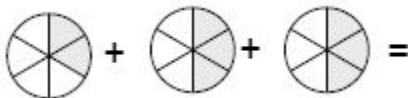
.....

6.



.....

7.



.....

8. In one particular suburb, 62.5% of families own a pug. If there are a total of 32 families in this neighborhood that own a dog in general, then how many dog owners own a pug? Round your answer to the nearest whole number if necessary.

.....

9. Sandy planted  $\frac{1}{12}$  rows of turnips,  $\frac{1}{12}$  rows of radishes and  $\frac{5}{12}$  rows of spinach in a garden. Sandy also planted  $\frac{5}{12}$  of a row of pine trees. How many rows of vegetables did Sandy plant?

.....

10. While mining, Mike found a large metal bar that weighed 22 ounces. Mike was also able to determine that the bar had 10 ounces of nickel. What percent of the weight of the bar was nickel? Round your answer to the nearest whole number.

.....

11.  $3 \frac{3}{45} + \frac{3}{45} + 0.45 =$

.....

12.  $22.35 + 1/5 + 0.5 =$

.....

13. A recipe called for  $5/6$  cup of chopped spinach,  $1/6$  cup of diced spinach and  $5/6$  cup of minced spinach.  $5/6$  cups of turnips were also needed. How many cups of spinach did the recipe call for?

.....

14.  $56.38 - 15.67 =$

.....

15.  $85.15 - 40.45 =$

.....

16.  $2 \frac{3}{11} \times 2 \frac{2}{15} =$

.....

17.  $1 \frac{13}{14} \times 12 =$

.....

18.  $9 \frac{1}{2} \times 3 =$

.....

19.  $1 \frac{4}{7} \times 1 \frac{1}{14} =$

.....

20. A recipe called for  $1 \frac{8}{11}$  cups of chopped walnuts,  $2 \frac{5}{12}$  cups of diced onions, and  $2 \frac{1}{4}$  cups of turnips. How many more cups of onions than walnuts did the recipe call for?

.....



## Section C - Extended practice

1. Give the following answer as a percentage:

$$777/1000 - 70/100 =$$

2. One teacher wants to give each student  $17/12$  slices of pizza. If the teacher has 17 slices of pizza, then how many students will she be able to hand out pizza to?

3. Benny wants to make tarts. To make tarts, he needs  $5/12$  of a cup of flour per batch of tarts. If Benny has 10 cups of flour, then how many batches of tarts can Benny make?

4.  $2\frac{1}{2}$  ft of fabric is needed to make drapes, while  $3\frac{7}{12}$  ft of fabric is required to make a rug. How much more fabric is needed to make a rug versus drapes?

5. Joan picked  $2\frac{1}{2}$  buckets of bananas, and Tim picked  $4\frac{1}{2}$  buckets of bananas. How many more buckets did Tim pick?

6. Put the numbers in order from smallest to largest:

95.23    $95/10$     $10/95$     $75/10$

7. Put the numbers in order from smallest to largest:

87.4    $23/2$     $230/2$     $55/25$    55.5

8. If a rabbit can move  $14/11$  miles every hour, then how many hours would it take for a rabbit to go 14 miles?

9. Convert your answer to seconds.

10. Complete the following table:

	45.88/100	24.5/50	23.99/50	27/75	33/75
Decimal					
Percentage					

11. Gill has to walk  $5 \frac{1}{6}$  miles to get to the library. Sam has to travel  $4 \frac{2}{6}$  miles to also get to the library. How much further does Gill have to walk than Sam to get to the library?

.....

12. Keith wants to complete  $2 \frac{1}{5}$  crosswords today. Keith has already done  $1 \frac{1}{5}$  crosswords. Keith also did  $2 \frac{3}{5}$  jumble puzzles. What fraction of crosswords does Keith have left to finish?

.....

13. Multiply this fraction by 2.

.....

14. Joan has to walk  $3 \frac{3}{8}$  miles to get to the mall.  $2 \frac{2}{9}$  miles past Joan's house is a store. Nancy has to travel  $2 \frac{9}{10}$  miles to also get to the mall. How much further does Joan have to walk than Nancy to get to the mall?

.....

15. Multiply this fraction by 2.

.....

16. Convert your answer to a percentage

.....

Convert the following figures to top heavy fractions, then carry out the calculation:

17.  $3 \frac{4}{8} \times 2 \frac{9}{10} =$

.....

18.  $2 \frac{2}{4} \times 4 \frac{4}{5} =$

.....

19.  $2 \times 14 \frac{1}{5} =$

.....

20.  $3 \frac{10}{12} \times 3 \frac{2}{3} =$

.....

Well done! Now go back and check  
your answers

# Numbers

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- Work neatly and write all answers in the space provided
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  - Make sure you show your working out
- 

## Section A - Practice

1. What number has 9 thousands, 4 fewer hundreds than thousands, 2 fewer tens than hundreds, and 6 more units than tens?

.....

2. Which number's underlined digit is worth **1000**?

3,118, 6,018, 1,721, 1,744

.....

3. What number has 3 thousands, 4 more hundreds than thousands, and 3 fewer tens than hundreds and 1 unit?

.....

4. Solve: 60 hundreds = \_\_\_\_ units

.....

5. You hear the following number: 2 thousand, 9 hundred 70. How do you write it using digits?

.....

6. What number has 9 hundreds, 4 fewer tens than hundreds, and 3 more units than tens?

.....

7. 51 is a prime number – True / False?

.....

8. Is 73 a prime number or a composite number?

.....

9. Is 43 a prime number or a composite number?

.....



10. Is 69 a prime number or a composite number?

.....

Section B - Thinking about it

1. Write the prime factorisation of 40.

.....

2. Write the prime factorisation of 3.

.....

3. Write the prime factorisation of 2.

.....

4. Write the prime factorisation of 189.

.....

5. What is the greatest common factor of 7 and 6?

.....

6. What is the greatest common factor of 16 and 8?

.....

7. What is the greatest common factor of 8, 16, and 20?

.....

8. What is the least common multiple of 7 and 5?

.....

9. What is the least common multiple of 12 and 3?

.....

10. What is the least common multiple of 12 and 11?

.....

11. Is 12,799 divisible by 3?

.....

12. Is 9,384 divisible by 6?

.....

13. Is 1,981 divisible by 10?

.....

14. In 78.135, which digit is in the tens place?

.....

15. In 0.327, in which place is the 7?

.....

16. Divide 0.33 by 100 =

.....

17. Multiply  $0.33 \times 0.3 =$

.....

18. Multiply  $0.5 \times 0.4 =$

.....

19. Multiply  $100 \times 0.05 =$

.....

20. 3981 divide by 100 =

.....



### Section C - Extended practice

1. If a box of christmas cards costs £0.42, how much would it cost to buy 11 boxes of christmas cards?

.....

2. Zara bought 9 blue markers. If each green marker cost £0.13 and blue marker cost £0.14 how much did Zara spend in all?

.....

3. How much does it cost to buy 21 cartons of ice cream if each carton of ice cream costs £0.65?

.....

4. Henry bought 3 strawberry split lollies. You get 2 free for each strawberry split lolly that costs £0.35. How much money did Henry spend?

.....

5. Owen bought 10 candy bars. If each candy bar cost £0.27, how much did Olly spend in total?

.....

6. A stick of butter costs £0.34. Tessa bought 3 sticks of butter. How much did Tessa spend in all?

.....

7. How do you write this number using digits – ninety–eight thousand three hundred and eleven?

.....

8. How do you write this number using words – 43,059?

.....

9. How do you write this number using words – 20,293?

.....

10. How do you write this number using words – 75,808?

.....

11. The temperature is  $2^{\circ}\text{C}$ . The temperature rises by  $5^{\circ}$ . The new temperature is \_\_\_\_.

.....

12. Put these temperatures in order, the lowest first:  $2^{\circ}\text{C}$ ,  $-7^{\circ}\text{C}$ ,  $6^{\circ}\text{C}$ ,  $-1^{\circ}\text{C}$ ,  $-6^{\circ}\text{C}$ ,  $-4^{\circ}\text{C}$ .

.....

13. Which of these temperatures is lowest?  $-6^{\circ}\text{C}$  or  $-7^{\circ}\text{C}$

.....

14. The temperature is  $-3^{\circ}\text{C}$ . How much must it rise to reach  $6^{\circ}\text{C}$ ?

.....

15.  $(-18) - 13 - (-19) =$

.....

16.  $(3 + (-9)) - (-9) =$

.....

17. 9 ten thousands = \_\_\_\_ hundreds.

.....

18. Explain how 857 is a prime number.

.....

19. Look at this number 94 064 079. Write down another number that includes a 7 with the same value.

.....

20. Is 5 a common factor of 25 and 30? Explain your reasoning.

.....

# Solving equations and Inequalities

- 
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- 

## Section A - Practice

Give a pair of numbers which, if they were the value of  $x$  and  $y$ , would satisfy the following equation:

1.  $X - y = 6$

.....

2.  $X + y = 6$

.....

3.  $X - 4 = y$

.....

4.  $X + y = 10$

.....

5.  $x + y = 30$

.....

Which sign from the following makes the statement in the questions below true?  
Rewrite the statement, replacing the question mark with the correct sign.

< > =

6.  $44 + 6 ? 10$

.....

7.  $33 - 2 \times 3 ? 3$

.....

WM613.3

8.  $25 \times 5 = 550$

.....

9.  $54 \times 1 = 54$

.....

10.  $50 \times 2 = 100$

.....



## Section B - Thinking about it

1.  $9 + a = 12$ . What is  $a$ ?

.....

2.  $L / 14 = 2$ . What is  $L$ ?

.....

3.  $12 \times c = 240$ . What is  $c$ ?

.....

4.  $10 + x = 22$ . What is  $x$ ?

.....

5.  $2 + x = 15$ . What is  $x$ ?

.....

6.  $S \times 5 = 65$ . What is  $S$ ?

.....

7. Mike bought 5 new baseball trading cards to add to his collection. The next day his dog ate half of his collection. There are now only 30 cards left. How many cards did Mike start with ?

.....

8. Sally had 75 dollars to spend on 7 books. After buying them she had 12 dollars. How much did each book cost ?

.....

9. Sara bought a soft drink for 2 dollars and 8 candy bars. She spent a total of 18 dollars. How much did each candy bar cost ?

.....

10. The sum of three consecutive even numbers is 168. What is the smallest of the three numbers ?

.....

11. On the first day of baseball camp, all the players were divided into 5 teams. There were 8 players on each team. Which equation, when solved, will tell the total number of players?

$$8 / p = 5 \quad p - 5 = 8 \quad p / 5 = 8 \quad 10 / p = 8$$

12. Cathy drives 3 kilometres every day. Which equation, when solved, will tell how many days it will take her to drive 12 kilometres?

$$d / 3 = 12 \quad 3 \times 12 = d \quad 3 / d = 12 \quad 3 \times d = 12$$

13. Solve for U.  $U = 33 + 54$

14. Use the equation  $e = t + 8$  to find the value of e when  $t = 3303$

15. In a game, the player who makes the last move receives a 7-point bonus for ending the game. Let x represent the score before the endgame bonus and y represent the final score. Complete the equation that represents the relationship between x and y:

$$x \quad y$$





## Section C - Extended Practice

1. Sally is baking a cake. The recipe calls for six cups of flour. She already put in four cups. How many more cups does she need to add ?

.....

2. Jessica had sixteen peaches left at her roadside fruit stand. She went to the orchard and picked more peaches to stock up the stand. There are now fifty – four peaches at the stand, how many did she pick ?

.....

3. How many ink cartridges can you buy with 150 dollars if one cartridge costs 15 dollars ?

.....

4. After paying 8 dollars for the pie, Jason has 99 dollars left. How much money did he have before buying the pie ?

.....

5. After eating at the restaurant, Sally, Mary, and Benny decided to divide the bill evenly. If each person paid forty – four dollars, what was the total of the bill ?

.....

6. There were 8 roses in the vase. Nancy cut some more roses from her flower garden. There are now 18 roses in the vase. How many roses did she cut ?

.....

7. Jessica is baking a cake. The recipe calls for 7 cups of flour. She already put in 3 cups. How many more cups does she need to add ?

.....

8. There are 31 walnut trees currently in the park. Park workers will plant more walnut trees today. When the workers are finished there will be 78 walnut trees in the park. How many walnut trees did the workers plant today ?

.....

9. After paying 6 dollars for the pie, Mike has 59 dollars left. How much money did he have before buying the pie ?

.....

10. Last week Tim had 32 dollars. He washed cars over the weekend and now has 52 dollars. How much money did he make washing cars ?

.....

11. After eating at the restaurant, Melanie, Jessica, and Tim decided to divide the bill evenly. If each person paid 39 dollars, what was the total of the bill ?

.....

12. There were 36 bales of hay in the barn. Benny stacked more bales in the barn today. There are now 74 bales of hay in the barn. How many bales did he store in the barn ?

.....

13. One pack of DVDs costs 17 dollars. How many packs can you buy with 289 dollars?

.....

Solve the following inequalities to find the value for 'x':

14.  $x + 3 \leq 16$

.....

15.  $8x < 12$

.....

16.  $x - 2 \leq 5$

.....

17.  $6x < 14$

.....

18.  $x/4 > 3$

.....

19.  $16 + x \geq 18$

.....

20.  $2 > x - 13$

.....