Stanground Academy Mathematics Department

Year 10 Home Learning Booklet



Student’s Name:...........................................................................

Teacher:............................................

Year: 10   
Basic Number, Factors and Multiples, Angles and Scale diagrams and bearings

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| Homework Sheet 1 Basic Number | Week 1 |
| 1: Double 134 | 1. Calculate the following: 2. 13 + - 5 = b) -14 + - 12= 3. -4 x -12 = d) -66 ÷ 3 = |
| 2. Put the following list of numbers in order starting with the smallest:  a) 2372, 1784, 2386, 1990, 3233, 3022  b) -13, -6, 0, 17, -12, 15 | 10: Rugby league teams have 13 in the starting line-up and four substitutes. Eight teams are in the tournament.   1. How many players are there altogether? 2. Each team has six forwards and three substitute forwards. How many forwards are in the tournament? |
| 3: Calculate the following additions and subtractions:   1. – 3 + 12 = 2. -4+ 8-2 = | 11: Write down all the factors of the following numbers:   1. 39 2. 44 3. 48 |
| 4: Place the correct symbol < or > between the numbers in each pair:   1. -8 0 2. 3.7 7.3 3. 2.5 -25.5 | 12: Write down the first five multiples of the following numbers:   1. 7 2. 12 3. 9 |
| 5: Round the following numbers to 1 decimal place:   1. 0.37 2. 2.89 3. 1.99 | 13: Find the Highest Common Factor(HCF) of the following:   1. 6 and 4 2. 25 and 40 |
| 6: A pack of 3 pens cost 45p. Work out how much a pack of 6 pens should cost. | 14: Write down the first 20 Prime numbers. |
| 7: Round the following numbers to 1 significant figure(1sf):   1. 8.3728 2. 45.3 3. 2399.9 | 15   1. Write a multiple of 20 that is bigger than 200 2. Write a multiple of 15 that is between 100 and 140 |
| 8: The diagram shows a plan of Tina’s living room.  5.65m  2.4m  Find the area of Tina’s living room to   1. 2dp 2. 2sf | 16: Find the Lowest Common Multiple(LCM) of the following:   1. 6 and 7 2. 8 and 10 3. 12 and 18 |
| Teacher’s feedback | Effort: |
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| Homework Sheet 2 Factors and Multiples | Week 2 |
| 1: Multiply 1.7 by 100 | 7: Two numbers have HCF = 15 and LCM = 90. One of the numbers is 30. What is the other number? |
| 2: Which of the following are multiples of 6?  6 15 28 42 64 72 | 8: Find the HCF and LCM of 28 and 126 using prime factor decomposition and Venn diagrams |
| 3: . Which of the following are factors of 80?  4 6 10 14 15 16 | 9: 108 = 22 x 33  How many factors does 108 have? |
| 4: Calculate the Highest Common Factor of the following:  a) 12 and 20  b) 14 and 22  c) 27 and 39  d) 60 and 105 | 10:   1. Draw two lines AB and CD which are parallel |
| 5: Calculate the Lowest Common Multiple of the following:   1. 4 and 9 2. 6 and 8 3. 12 and 15   d) 9 and 21 | 11: Draw two lines that are perpendicular to each other. |
| 6: Find the HCF and LCM of 18 and 42 | 12: Calculate 20 - 3 x 4 |
| Teacher’s feedback | Effort: |

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| Homework Sheet 3 Angles/ Bearings | Week 3 |
| 1: Calculate the missing angle | 8: Find the sum of the **interior** angles in a heptagon |
| 2 Calculate the missing angle | 9: Draw a sketch to show the eight compass points: N, NE, E, SE, S, SW, W and NW |
| 3: Calculate the missing angle | 10: What is the size of an exterior angle on a regular 20-sided shape? |
| 4: Calculate the missing angle | 11 :What is the size of an exterior angle on a regular 18-sided shape? |
| 5: Find the missing angles and give a reason. | 12: A regular polygon has an interior angle of 157.5 degrees. What is the exterior angle and hence, how many sides does the polygon have? |
| 6 Calculate the missing angles and give reasons for your answer | 13: **T**he bearing of a ship from a lighthouse is 050°. Work out the bearing of the lighthouse from the ship. |
| 7:Find the missing angles and give reasons | 14: **Q4.** The diagram shows part of a map.    (a) Find the bearing of the church from the tower.  The scale of the map is 1 cm represents 2.5 km.  (b) Work out the real distance between the tower and the church. |
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| Homework Sheet 4 Scale diagrams and Bearings | Week 4 |
| :  1 | 11  Simplify the following expression:   1. 5x + 2y -7x +y 2. 9j -5k -11j +6j |
| 2: Draw an L shaped field that is 100m by 50m on each side of the L shape.  Use a scale of 1cm: 20m. | 12: Simplify the following   1. C2 x c4 |
| 3 Draw an accurate diagram for each of the following bearings.  (i) An aircraft flying on a bearing of 075º.  (ii) A submarine travelling on a bearing of 150º. | 13:  5x-y D = ST 3x – 2 = 7  Give an example of each of these from the box.   1. Equation 2. Expression 3. formula |
| 4 Calculate the following using a written method: 47.39 – 18.5 | 14: Simplify 4*f* - 6 + 3*f* - 8 |
| 5: Draw a wall plan of a house front that is 15m long and 7m high. It has a door in the centre of the wall measuring 2m by 1m and a window on either side of the door that are 1m square. Use a scale of 1: 10. | 15: Find the value of 12 - 3*f* when *f* = 3 |
| 6: A 100ml tub of ice cream costs £1.50. Work out how much a 500 ml tub of ice cream would cost. | 16: Calculate 5 - 2 + 3 |
| 7: Find the next two terms of this sequence.  7, 13, 19, 25, ……, ……, | 17: Expand 3(5 - 2*f*) |
| 8: Draw the next picture in this pattern | 18: Factorise 6*f* - 8 |
| **Q9.** The scale diagram shows the positions of two towns, *A* and *B*.      (a) Measure and write down the bearing of town *B* from town *A*.        ..................................................................................................................  (b) What is the real distance from town A to town B?        Give your answer in km. | C19: Solve the equation 3*f* - 8 = 1 |
| 10: Write the name of this part of a circle | 20: 8 x 9 |
| Teacher’s feedback: | Effort: |

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| Homework 5 Basic Algebra | Week 5 |
| 1: Halve 146 | 11: Find the circumference of a circle with a diameter of 10 cm. |
| 2: Simplify 5*j* - 3 - 7*j* + 9 | 12: Find the area of a circle with a diameter of 10 cm. |
| 3: Find the value of 12 - 5*j* when *j* = 6 | 13: A football game lasts 90 minutes plus extra time. A game has *e* minutes extra time. Write an expression for the total length of the football game. |
| 4: Calculate 9 x (4+5) ÷ 2 | 14: Simplify 3*g* + 5*h* - 7*g* + 2*h* |
| 5: Expand 10(4*j* - 7) | C15: Find the value of 5*g* + 3*h* when *g* = 2 and *h* = -1 |
| 6: Factorise 15 - 6*j* | 16: Calculate 9 x 7 - 4 x 5 |
| 7: Solve the equation 6*j* + 7 = 11 | 17: Expand 8(3*g* + 5*h*) |
| 8: 18 x 7 | 18: Factorise 12*g* + 18*h* |
| 9: Find the nth term of the sequence 9, 15, 21, 27, … | 19: Solve the equation 7*g* - 5 = 2 |
| 10: Write the name of this part of a circle | 20: 6 x 8 |
| Teacher’s feedback | Effort: |
| Homework 6 Basic Fractions | Week 6 |
| 1: Calculate 930 ÷ 100 | 11: Find the circumference of a circle with a radius of 18 cm |
| 2: Fill in the missing spaces | 12: Find the area of a circle with a radius of 18 cm |
| 3: Calculate | 13: Every member of a book club has read one of the following book series: Harry Potter, The Hunger Games *or* The Lord of the Rings. There are 30 people in the club. have read The Hunger Games , have read Harry Potter. What fraction of the club have read The Lord of the Rings? |
| 4: Calculate | 14: Simplify 5*j* - 3 - 7*j* + 9 |
| 5  Work out . | 15: Find the value of 12 - 5*j* when *j* = 6 |
| 6:  Work out . | 16: Calculate 9 x (4+5) ÷ 2 |
| 7: All 200 students study either Geography, History or RE. of the students study Geography, of the students study History. How many students study RE? | 17: Expand 10(4*j* - 7) |
| 8: Draw the next picture in this pattern | 18: Factorise 15 - 6*j* |
| 9: Find the nth term of the sequence 14, 26, 38, 50, … | 19: There are 500 people at a wedding, who either know the bride *or* the groom. 260 people know the bride. What fraction of the people knows the groom? Write your answer in its simplest form. |
| 10: Write the name of this part of a circle | 20: 81x 7 |
| Teacher’s feedback | Effort: |