Mathematics Department

Year 9 Home Learning Booklet

Stanground academy

 

Sequences, Basic Percentages, Perimeter and Area, Circumference and area of the circle, Ratio and proportion, Real life graphs

Foundation

Student’s name.............................................................................

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

Please note:

1. If you do not have a scientific calculator use π as 3.14
2. Fractions to be calculated, not input into a calculator
3. Please put all decimal answers to 1 decimal place

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| Homework 1 |  |
| 1: Fill in the box to complete the calculation 148 + = 203 | 12: Simplify 8*a* + 3 - 2*a* - 7 |
| 2: Calculate  | 13: Expand 5(2*x* - 5) |
| 3: Calculate  | 14: Solve the equation 4*x* - 3 = 13 |
| 4: Calculate  | 15: Find the circumference of a circle with diameter 6 cm. |
| 5: Multiply 0.72 by 1000 | 16: Write the name of this part of a circle |
| 6: Find the nth term of the sequence 4, 7, 10, 13,  | 17: Work out the perimeter of the triangle. Hint Find the length of H first. |
| 7: Find the nth term of the sequence 9, 17, 25, 33,  | 18: A recipe for 4 scones uses 250g of butter. Work out the amount of butter needed for 6 scones. |
| 8: Calculate 64% of £720 | 19: Share £60 in the ratio 5:7 |
| 9: Increase £80 by 10% | 20: Find the area of a circle with a diameter of 8 cm. |
| 10: Work out the number of squares in the 10th pattern | 21: Calculate 17% of £932 |
| 11: Find the second difference of the quadratic sequence 3, 5, 9, 15,....  | 22: Write down the monthly rainfall for April.   |
| Teacher feedback: |  |

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| Homework 2 |  |
| 1: Double 684 | 13: Write the name of this part of a circle |
| 2: Write down the first term of 7*n* – 5 that is greater than 100. | 14: Robert, Sarah, and John share money in the ratio 2:5:8. In total they have £120. Work out how much each gets. |
| 3: Calculate the value of 7 + (-4) | 15: Calculate 8.5% of £650 |
| 4: Calculate 0.26 + 0.89 - 1.047 | 16: Increase 10 metres by 15% |
| 5: Work out  | 17: A jacket is reduced in price from £50 to £41. Write the amount reduced by as a fraction of the original. |
| 6: Calculate  | 18: Find the missing lengths on this picture |
| 7: Convert 0.5 to a fraction | 19: Find the total area in this pictureImage result for compound shapes |
| 8: Simplify *a* + *a* + *a* + *a* + *a* | 20: Convert  into a percentage |
| 9: Multiply 3.7 by 0.1 | 21: Calculate 134% of 73kg |
| 10: Work out the number of squares in the 10th pattern | 22: Find the nth term of the sequence -1, 3, 7, 11, … |
| 11: Find the nth term for the sequence 5, 8, 11, 14, … | 23: Find the area of a circle with diameter 6 cm. |
| 12: Find the second difference of the quadratic sequence 3, 5, 11, 21, … | 24: At how many different points is the object moving? |
| Teacher’s feedback: |  |
| Homework 3 |  |
| 1: Fill in the box to complete the calculation ─ 326 = 859 | 13: Expand 4(*b* + 3*c*) |
| 2: Find the *n*th term of the sequence -3, - 7, - 11, -15, … | 14: Expand (*b* + 2)(*b* + 1) |
| 3: Find the area of this circle. | 15: Factorise 5*b* + 15 |
| 4: Convert 0.07 to a percentage | 16: Estimate the calculation  |
| 5: Find the next term of the sequence:15, 18, 21, 24, 27, …. | 17: : Leah, Mikhail and Naureen share money in the ratio 3:5:7. If they share £210 in total, work out how much Mikhail gets |
| 6: Decrease 42 metres by 58% | 18: Find the area of this shape. |
| 7: Find the total area of this shapeImage result for compound shapes | 19: Find the perimeter of this shape |
| 8: Use this graph to work out how many metres is equal to 15 feet.Image result for Conversion graph | 20: For how long altogether is Dan stationary?  http://nerdymaths.weebly.com/uploads/1/4/8/5/14858730/9062865_orig.png |
| 9: Decrease 4500 ml by 23% | 21 : The perimeter of this rectangle is 45 cm. Find the value of *x*. |
| 10: Change 0.675 into a percentage. | 22: Write down the next two terms of this sequence1, 2, 4, 8, 16, … |
| 11: Calculate 83% of 87 metres. | 23: Find the circumference of this circle. |
| 12: Jack and Jill share money in the ratio 3:5. If Jack gets £120 in total, work out how much Jill gets. | 24: Find the area of this shape. |
| Teacher’s feedback: |  |

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| Homework 4 |  |
| 1: Calculate 4.06 x 2.6 | 12: Calculate 126 ÷ 7 |
| 2: Calculate ⅚ x ⅖ | 13: Calculate 0.6 + 0.25 |
| 3: Round 73.562 to two decimal places. | 14: Simplify 4*x* – 2*y* – 3*x* + *y* |
| 4: : Calculate  | 15: Convert  to an improper fraction |
| 5: Write down the next two terms of this sequence15, 11, 7, 3, … | 16: Calculate  |
| 6: : Find the value of *x* | 17: A person has an IQ of 120. Estimate their score on the general knowledge test. http://www.bbc.co.uk/staticarchive/65023bf38dd1d72ed43cc41997dbca4eda3c3405.gif  |
| 7: James earns a monthly salary of £1500 per month. Calculate his yearly salary.  | 18: Write down the name of this sequence:1, 4, 9, 16, 25, …. |
| 8: James earns a monthly salary of £1500 per month. James pays tax that totals 9% of his monthly wage. Work out the tax he pays. | 19: Find the next term of the sequence:4, 7, 10, 13, …. |
| 9: Solve the equation  | 20: Calculate 17% of £63 |
| 10: Change ⅜ into a decimal. | 21: Write down the name of this sequence:1, 8, 27, 64, 125, … |
| 11: Increase 450 ml by 125% | 22: Find the nth term of the sequence:4, 7, 10, 13, …. |
| Teacher feedback: |  |