**School Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Student Number \_\_\_\_\_\_\_\_\_\_\_**

**The following questions must be done without calculators on an individual basis.**

**1 mark each. (20 marks total per student). No work is required to be shown.**

**Time Limit: 15 minutes**

1. Find 20% of 2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Find 200% of 200 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. 77is 11% of what number? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Evaluate $50÷\frac{5}{6}$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. What is the remainder when 913 624 is divided by 5? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. Find the slope of the line $y=\frac{4x-3}{2}$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. Find the slope of the line 3x – 5y + 7 = 0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. Expand and simplify (4*x* + 3)(4*x* – 3) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. Expand and simplify $\left(4x+3\right)^{2}$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. State the coordinates of the vertex of $y=x^{2}-9$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
11. State the coordinates of the vertex of $y=-3x^{2}+12x-5$**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
12. Simplify (as a single power) $\left(y^{3}\right)^{4}÷y^{5}$. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
13. Write as a single power with a positive exponent $\left(\frac{3}{4}\right)^{-5}×\left(\frac{3}{4}\right)^{-2}$ \_\_\_\_\_\_\_\_\_\_\_\_
14. Evaluate $\sqrt[4]{81^{3}}$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

15.) Find the sum of the first 101 terms of the sequence 3, -3, 3, -3, …

1. Find the area of the rectangle with width = 5 cm and diagonal = 13 cm. \_\_\_\_\_\_\_\_\_\_\_
2. If *x*:9: 7 = 12:27 : *y* find the sum of*x*and *y*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Factor fully:$x^{4}-5x^{2}+4$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

19.) The volume of a cube is 343 cm3. What is the area of one face of the cube? \_\_\_\_\_\_\_

20.) Simplify.$\left(\sqrt{9x^{3}+9}\right)\left(\sqrt{4x^{3}+4}\right)$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Marking Scheme**

**1 mark each. (20 marks total per student)No work is required to be shown.**

**The Team Total is the Best Five Students Totals For Each Team, Divided by 2.**

1. Find 20% of 2 0.4
2. Find 200% of 200 400
3. 77 is 11% of what number? 700
4. Evaluate $50÷\frac{5}{6}$ 60
5. What is the remainder when 913 624 is divided by 5? The remainder is 4.
6. Find the slope of the line $y=\frac{4x-3}{2} m=2$
7. Find the slope of the line 3x – 5y + 7 = 0 $ m=\frac{3}{5}$
8. Expand and simplify (4*x* + 3)(4*x* – 3) $ 16x^{2}-9$
9. Expand and simplify $\left(4x+3\right)^{2} 16x^{2}+24x+9$
10. State the coordinates of the vertex of $y=x^{2}-9 \left(0, -9\right)$
11. State the coordinates of the vertex of $y=-3x^{2}+12x-5 \left(2, 7\right)$
12. Simplify (as a single power) $\left(y^{3}\right)^{4}÷y^{5}$. $y^{7}$
13. Write as a single power with a positive exponent $\left(\frac{3}{4}\right)^{-5}×\left(\frac{3}{4}\right)^{-2} \left(\frac{4}{3}\right)^{7}$
14. Evaluate $\sqrt[4]{81^{3}}$ 27

15. Find the sum of the first 101 terms of the sequence 3, -3, 3, -3, … 3

16. Find the area of the rectangle with width = 5 cm and diagonal = 13 cm. 60 cm2

17. If *x* : 9: 7 = 12 : 27 : *y* find the sum of *x* and *y* 25

18. Factor fully: $x^{4}-5x^{2}+4 \left(x+2\right)\left(x-2\right)\left(x+1\right)\left(x-1\right)$

19. The volume of a cube is 343 cm3. What is the area of one face of the cube? 49 cm2

20. Simplify. $\left(\sqrt{9x^{3}+9}\right)\left(\sqrt{4x^{3}+4}\right) 6\left(x^{3}+1\right)$ or$ 6x^{3}+6$