**MATHEMATICS HOLDAY PACKAGE**

1. Express as single logarithms.
2. 2 + 2 + 2
3. ½ + ⅓ + +
4. Express as single logarithms: ½ +
5. Without using tables or calculators, evaluate 2+ ⅓
6. Rationalise
7. Given that *p* is inversely proportional to the cube root of and *p* = 5 when = 27. Find the value of *p* when = 125.
8. Simplify: 3 + 5 ½.
9. Solve for y: -2y x 3y = 243
10. Factorise completely; 2xy2 – 32x3.
11. Given f(x) =
12. Find the equation of a line passing through the point (2, 3) and is parallel to the line 5x – 4y = 10
13. Given that = 0.4771, and , evaluate:
14. Evaluate:
15. Given 135n = 75ten, find n
16. Given that () = 2 + 3 and g() = 3 + 6, find gf(2)
17. Make p the subject of the formula. T = 2 , hence find p, given T = 4, g = 10
18. Given that () = 3 – 5 and h() = 25 – 2, find the value of for which hf() = 12.
19. Two similar jugs have heights of 21cm and 14cm. The smaller jug has an area of 2.5cm2. find the area of the big jug.
20. Solve the simultaneous equations,
21. 2 – 3y = 0
22. + 2y = 7
23. Find the equation of the line passing through the point (2, 3) and (-4, 9).
24. Solve for y in the given equation: =
25. Solve for x: 4x = 0.5.
26. Form an equation whose roots are -⅗, ⅚
27. Given *P* = 2 8 and Q = 3 7 , find det(PQ)

 -5 -6 5 -3

24. Simplify:

25. Simplify:

26. Solve using matrices.

 – y = 3

 3 + y = 5

27. Evaluate:

28. Make b the subject given a =

29. Find the area of the figure below.

 10cm

 20cm 20cm

 10cm

30. Given -2 + 3**r** = 4 . find the coordinates of the point R.

 -5 4

**END**