数学初二考试练习

1. 杰升向银行 MoneyBank 贷款 RM 5000,若年利率是 12%，两年后他需要偿还银行多少钱?
   Jason borrow RM 5000 from Moneybank, if the charges of interest is 12% per annum, how much does he have to paid after 2 years?

2. 一物品原价 RM400， 若卖价是原价的 30%，而在一项大减价中，它 以 8 折出售，求此物品的利润。
   A goods cost RM 400. Selling price of the goods is 30% more than the cost. If it discounts 20% from the selling price for sale, find its profit.

3. 阿里先生将一物品以 25%利润卖给阿九先生，几年后，阿九先生将 8 折转卖给母都先生，若母都先生以 RM 4200 购买此物品，求阿里先生购买此物品的原价。
   Mr. Ali earns 25% of profit from selling a product to Mr. Ah Kao. After a year of using, Mr Ah Kao sell it to Mr. Mutu by discounts it 20%. If Mr. Mutu bought it by RM 4200, find the price of the product which was firstly bought by Mr. Ali.

4. 解$2(7-x)-(3x-2)=60$
   Solve $2(7-x)-(3x-2)=60$

5. 一支 3B 铅笔比原子笔贵 10 仙，若三支铅笔和原子笔的价格共 RM11.50，求一支原子笔的价钱。
   A 3B pencil is 10 sen more expensive than a normal pen. Cost of 3 similar pencils and 5 pens is RM 11.50. Find the price of a pen

6. 三个连续偶数之和是 2364，求此三数
   Sum of three consecutive even number is 2364. What is these three number are?

7. 若 12 和 X 的 LCM 是 36，求 X 的可能值
   The LCM of 12 and X is 36. Find the possible values of X

8. 一长方形的周长是 20 cm,面积是 24 cm^2 ,求长方形的长和宽。
   The perimeter of a rectangle is 20cm, and its area is 24cm^2. Find the length and width of the rectangle.

9. 一水桶可在 3 小时内被两支不同大小水管填满，若只用较小的水管将桶填满比较大的水管需要花多 8 小时的时间，求两支水管独自填满水桶的时间。
   A water tank can be filled with water by two pipes in 3 hours. If the smaller pipe takes 8 hours more than the larger pipe to fill up the pool, find the time in which it will be filled by each pipe operating individually.

10. 化简$(a^2b)^{2(}ab^2)^2$
    Simplify $(a^2b)^{2(}ab^2)^2$

11. 化简$2[\frac{1}{4}a+\frac{3}{8}(1-a)]$
    Simplify $2[\frac{1}{4}a+\frac{3}{8}(1-a)]$

12. 化简$1-3x-(x-2)(x+3)$
    Simplify $1-3x-(x-2)(x+3)$

13. 化简$(21pq^2+9p^4q^3)\div(3pq^2)$

Simplify $(21pq^2 + 9p^4q^3) \div (3pq^2)$

14. 求商数和余数$(4x^3 + 6x^2 - 3) \div (2x + 1)$
Find the quotient and remainder of $(4x^3 + 6x^2 - 3) \div (2x + 1)$

15. 因式分解$5p^2 + 13pq + 6q^2$
Factorize $5p^2 + 13pq + 6q^2$

16. 因式分解$\frac{x^2}{25} - \frac{y^2z^2}{4}$
Factorize $\frac{x^2}{25} - \frac{y^2z^2}{4}$

17. 因式分解$10a^2 - 5a(a - b)$
Factorize$10a^2 - 5a(a - b)$

18. 因式分解$a^2b^2 + 1 - a^2b^2$
Factorize $a^2b^2 + 1 - a^2b^2$

19. 求 LCM 和 HCF$p^2 + q^2 + 2pq, 4p^2(p + q), 6q^3(p + q)^2$
Find the LCM and HCF of $p^2 + q^2 + 2pq, 4p^2(p + q), 6q^3(p + q)^2$

20. 化简$\frac{5}{ab} + \frac{2}{b^2}$
Simplify $\frac{5}{ab} + \frac{2}{b^2}$

21. 化简$\frac{\frac{p+q}{r}}{\frac{p^2-q^2}{pr}}$
Simplify $\frac{\frac{p+q}{r}}{\frac{p^2-q^2}{pr}}$

22. 化简$\frac{x-6y}{x^2y^2} \times \frac{x}{y} \div \frac{6y-x}{xy^3}$
Simplify $\frac{x-6y}{x^2y^2} \times \frac{x}{y} \div \frac{6y-x}{xy^3}$

23. 化简$\frac{x+3}{x^2+3x+2} + \frac{x-1}{x^2-x-6}$
Simplify $\frac{x+3}{x^2+3x+2} + \frac{x-1}{x^2-x-6}$

24. 解$(x - 7)(x + 3) = 5$
Solve $(x - 7)(x + 3) = 5$

25. 解$2x^2 + 5x - 7 = 0$
Solve $2x^2 + 5x - 7 = 0$

26. 解 $\frac{x-4}{x^2+x-2} - \frac{1}{x-1} = \frac{2}{x^2-4}$
Solve $\frac{x-4}{x^2+x-2} - \frac{1}{x-1} = \frac{2}{x^2-4}$

27. 若$x=-3$是方程式$x^2+px+15=0$的解，求和方程式的另一x。
If $x=-3$ is the solution of the equation$x^2+px+15=0$, find the value of p. Hence find the other solution of the equation

28. 解不等式 $5(x+3)\geq 3(x-1)+10$，$\frac{x+1}{3}-\frac{x+2}{2}>-\frac{1}{6}$
Solve the simultaneous inequalities $\begin{cases}5(x+3)\geq 3(x-1)+10\\ \frac{x+1}{3}-\frac{x+2}{2}>-\frac{1}{6}\end{cases}$

29. 已知$-4\leq x\leq 2$ 和 $2\leq y\leq 4$，x 和 y 是整数，求
Given that $-4\leq x\leq 2$ and $2\leq y\leq 4$, x and y are integer, find
   a. 最大值$\frac{1}{y}+\frac{1}{x}, x\neq 0$
   The largest value of $\frac{1}{y}+\frac{1}{x}, x\neq 0$
   b. 最小值x^2-y^2
   The least value of x^2-y^2

30. 一长方体的长和宽是$(x+3)$cm 和 5 cm，求 X 最小的可能值若长方形的面积是 40cm^2.
The length and width of a rectangle are $(x+3)$cm and 5 cm respectively. Find the least integer value of x, if the area of the rectangle is greater than 40cm^2.

31. 化简$\frac{x^2-y^2}{3x^2y^2}\div(\frac{1}{y}-\frac{1}{x})$
Simplify $\frac{x^2-y^2}{3x^2y^2}\div(\frac{1}{y}-\frac{1}{x})$

32. 解$2x^2-x-6=0$
Solve $2x^2-x-6=0$

33. 解$\frac{2}{x-1}-\frac{1}{2x-1}=\frac{5}{2x^2-3x+1}$
Solve $\frac{2}{x-1}-\frac{1}{2x-1}=\frac{5}{2x^2-3x+1}$

34. 求两个连续正奇数的平方和是 130，求这两数。
Find the two-consecutive positive odd numbers such that the sum of their squares is equal to 130

35. 因式分解$ka-kb-mb+ma$
Factorize $ka-kb-mb+ma$

36. 因式分解$(a+2b)^2-(a+2b)(3a-7b)$
Factorize $(a+2b)^2-(a+2b)(3a-7b)$

37. 若$x+y=7$和$x^2+y^2=25$，求 xy 之值
Given that $x+y=7$ and $x^2+y^2=25$, find the value of xy

38. 如图所示，求 x 值
In diagram, find the value of x

39. 如图所示，PQRSTU 是个正六边形，TUV 是条直线，求 x
In diagram, PQRSTU is a regular hexagon and TUV is a straight line. Find the value of x

40. 如图所示，PQ = SQ= RQ, < SQR = 62°,<PST =74°, 求<PQS
As shown in diagram, given that PQ = SQ= RQ, < SQR = 62°,<PST =74°, find <PQS

41. 如图所示，AD 是< CAE 的角平分线. < B =30°和 < DAE = 65°，求 < ACD
In diagram, AD is the angle bisector of < CAE. < B =30°and < DAE = 65°，find < ACD

42. 若一个正多边形的外角是 36°, 求此正多边形的内角和。
If the exterior angle of a regular polygon is 36°, find the sum of the interior angle of the polygon.

43. 如图所示，M 是 AB 的中点，MC=MD, < CMA= <DMB，证明Δ ACM ≈ ΔBDM 和 AC= BD
In the diagram, M is the mid-point of AB, MC=MD, < CMA= <DMB, prove Δ ACM ≈ ΔBDM, hence show that AC= BD

44. 图中所示一个正五边形，求 x + y
Diagram shows a regular pentagon. Find value of x + y

45. 如图所示，ABCD 是平行四边形，ABE 是一条直而 BC = BE，求 x 和 y 的值。
In diagram, ABCD is a parallelogram, ABE is straight line and BC= BE. Find the values of x and Y

46. 如图所示，ABCD 是一个直角梯形，, AB = 4cm, AD = 6cm. 求 DC
In diagram, ABCD is right – angle trapezium, AB = 4cm, AD = 6cm. Find DC

47. 若$x^2 = 169$,试求 x 的可能值
If $x^2 = 169$,find possible value of x

48. 化简$\sqrt{75}$
Simplify $\sqrt{75}$

49. 计算$\sqrt{(-9)^2} + \sqrt{0.04}$
Calculate $\sqrt{(-9)^2} + \sqrt{0.04}$

50. 试用中点公式求点(-5,-4)和点(9,-2)的中点坐标
Find the mid point of (-5,-4) and (9,-2)

51. 在三角形 ABC 中，<A= 51°，<B=35°30’,求 C
In triangle ABC, <A= 51°，<B=35°30’,find C

52. 图中，三角形 ABC 是等腰三角形， AB= BC。如果<A 的外角=100°， 求<B
In diagram, triangle ABC is an isosceles triangle, AB= BC, if exterior angle of <A is 100°, find angle <B

53. 计算$\sqrt{81 \times 225}$
Calculate $\sqrt{81 \times 225}$

54. 计算 $\sqrt[3]{1 - \frac{61}{125}}$
Calculate $\sqrt[3]{1 - \frac{61}{125}}$

55. 解联立方程式$\begin{cases} 3x - y = 3 \\ x + 2y = 8 \end{cases}$
Solve simultaneous equation $\begin{cases} 3x - y = 3 \\ x + 2y = 8 \end{cases}$

56. 以图解联立方程式$\begin{cases} 2x-y=-1 \\ 4x+3y=-12 \end{cases}$

Solve simultaneous equation using graph $\begin{cases} 2x-y=-1 \\ 4x+3y=-12 \end{cases}$

比例尺：水平轴以 3cm 代表 1 单位，垂直轴以 2cm 代表 1 单位）

Ratio: horizontal axis 3cm represent 1 unit, vertical axis 2cm represent 1 unit

57. 计算$\sqrt{160000}-\sqrt[3]{-343}$

Calculate $\sqrt{160000}-\sqrt[3]{-343}$

58. 如果大小二数之和为 98， 它们的差为 50， 求此二数

If sum of two numbers is 98, the difference between two numbers is 50, find the numbers

59. 若两点(m,3)及(5,n)在直线 y=3x+6，则 n-m=?

If two points (m,3) and (5,n)lie on straight line y=3x+6 , find n-m

60. 如图，AD//BC, AB=AC, DA=DC 及<D=100°，求<BAC

From the diagram , AD//BC, AB=AC, DA=DC and <D=100°， find <BAC

61. 下图，PQST 是直线， <R=33°，求 x

From diagram, PQST is a straight line， <R=33°， find x

62. 两年前， 父亲的年龄是儿子年龄的 4 倍；三年后，父亲的年龄是儿子年龄的 3 倍。求父亲与儿子今年的岁数。

Two years ago, the father's age was four times the age of his son; three years later, his father's age is three times the age of his son. What is the age of father and son this year.

63. 解联立方程式$\begin{cases} 4(x+y)-5(x-y)=2 \\ \frac{1}{4}(x+y)=4-\frac{1}{3}(x-y) \end{cases}$

Solve simultaneous equation $\begin{cases} 4(x+y)-5(x-y)=2 \\ \frac{1}{4}(x+y)=4-\frac{1}{3}(x-y) \end{cases}$

64. 在图中，AB=AC, AD=DB=BC, 求<BCD

From diagram, AB=AC, AD=DB=BC, find <BCD