

Solutions to Word Problems  
Nan Hua Paper 2  
P6 Mathematics CA1 2018

Show your working clearly in the space provided for each question and write your answers in the spaces provided.

6. a)

Total money collected by the 4 classes =  $200 + 210 + 150 + 240 = \$800$

b)

Average collection of 5 classes =  $(800 + 275) \div 5 = \$215$

Ans: (a) \$800  
(b) \$215

---

7. Let number of boys in class =  $n$

Number of boys that like to eat vegetables =  $0.4n$

Number of girls in class =  $42 - n$

Number of girls that like to eat vegetables =  $0.5 \times (42 - n) = 21 - 0.5n$

Total children who like to eat vegetables = 19

$$0.4n + 21 - 0.5n = 19$$

$$0.1n = 2$$

$$n = 2 \times 10 = 20$$

Number of boys in class = 20

Ans: 20

8. Let number of twenty-cent coins =  $n$   
Number of fifty-cent coins =  $30 - n$   
 $20n + 50 \times (30 - n) = 930$  cents  
 $30n = 1500 - 930 = 570$   
Number of twenty-cent coins =  $n = 570 \div 30 = 19$

Ans: 19

---

9. At first,  
Number of red balls =  $0.2 \times 210 = 42$   
Number of other colour balls =  $210 - 42 = 168$   
At the end,  
70% of balls are of other colour balls = 168  
10% of balls  $\rightarrow 168 \div 7 = 24$   
30% of balls  $\rightarrow 3 \times 24 = 72$   
  
Additional red balls to be purchased =  $72 - 42 = 30$

Ans: 30

---

10.  $\angle DCQ = 45 + 13 = 58^\circ$   
 $\angle QDC + \angle CQD = 180 - 58 = 122^\circ$   
 $\angle QDC = 122 \div 2 = 61^\circ$  (isosceles triangles  $QC = DC$ )  
 $\angle ADQ = 90 - 61 = 29^\circ$

Ans:  $29^\circ$

---

11. Let original number of tulips =  $15u$   
 Number of tulips sold =  $\frac{3}{5} \times 15u = 9u$   
 Number of roses at first =  $15u + 66$   
 Number of roses sold =  $\frac{1}{3} \times (15u + 66) = 5u + 22$   
 Difference between number of tulips and roses sold =  $9u - (5u + 22)$   
 $= 4u - 22 = 74$   
 $4u = 74 + 22 = 96$   
 $u = 96 \div 4 = 24$   
 Number of tulips left =  $15u - 9u = 6u = 6 \times 24 = 144$   
 Number of roses left =  $\frac{2}{3} \times (15u + 66) = 10u + 44 = 240 + 44 = 284$   
 Total roses and tulips left =  $144 + 284 = 428$

Ans: 428

---

12. Area of triangle DFC =  $\frac{1}{2} \times 9 \times 10 = 45 \text{ cm}^2$

$$\frac{5}{9} \text{ of area of triangle DFC} = \frac{5}{9} \times 45 = 25 \text{ cm}^2$$

$$\frac{5}{6} \text{ of area of rectangle ABCD} = 25 \text{ cm}^2$$

$$\text{Whole area of rectangle ABCD} = \frac{6}{5} \times 25 = 30 \text{ cm}^2$$

$$\text{Length BC} = 30 \div 10 = 3 \text{ cm}$$

Ans: 3 cm

---

13.  $\frac{1}{4}$  of remainder after giving to Ben – 2 = 46 cards

$$\frac{1}{4} \text{ of remainder after giving to Ben} = 46 + 2 = 48$$

$$\text{Remainder after giving to Ben} = 4 \times 48 = 192$$

$$\frac{2}{3} \text{ of Alan's cards} - 8 = 192$$

$$\frac{2}{3} \text{ of Alan's cards} = 192 + 8 = 200$$

$$\text{All of Alan's cards} = \frac{3}{2} \times 200 = 300 \text{ cards}$$

Ans: 300 cards

---

14. 20% discount of set of sofa = \$240  
80% price of set of sofa =  $240 \times 4 = \$960$   
20% discount of bed = \$180  
80% price of bed =  $180 \times 4 = \$720$   
Total amount he paid =  $960 + 720 = \$1680$

Ans: \$1680

---

15. At first, ratio of number of red beads to blue beads  $\rightarrow 3 : 5 \rightarrow 9u : 15u$   
At the end, ratio of number of red beads to blue beads  $\rightarrow 2 : 5 \rightarrow 2u : 5u$   
(where blue beads become  $5u$  or  $\frac{1}{3}$  of  $15u$ )  
Number of red beads used =  $9u - 2u = 7u$   
 $7u = 21$   
 $u = 3$   
Total number of beads Devi bought =  $9u + 15u = 24u = 24 \times 3 = 72$

Ans: 72

---

16. a)

Before price increase, Xavier's share would have been  $= \frac{100}{120} \times 60 = \$50$

40% of price of toy to be paid by Xavier  $\rightarrow \$50$

100% of price of toy  $\rightarrow \frac{100}{40} \times 50 = \$125$

b)

Zac's share of toy  $= \frac{70}{100} \times 60 = 42\%$

40%, Xavier's share  $\rightarrow \$60$

42%  $\rightarrow \frac{42}{40} \times 60 = \$63$

Ans: (a) \$125

(b) \$63

17. At first, ratio of number of ten-cent coins vs twenty-cent coins = 2 : 5

At the end, ratio of number of ten-cent coins vs twenty-cent coins = 8 : 5

$$2u : 5u$$

Add 20 ten-cent coins and subtract 10 twenty-cent coins.

$$2u + 20 = \frac{8}{5} \times (5u - 10) = 8u - 16$$

$$6u = 20 + 16 = 36$$

$$u = 36 \div 6 = 6$$

$$u = 6$$

At first,

$$\text{Number of ten-cent coins} = 2 \times 6 = 12$$

$$\text{Number of twenty-cent coins} = 5 \times 6 = 30$$

Ans: 12 10-cent coins  
30 20-cent coins

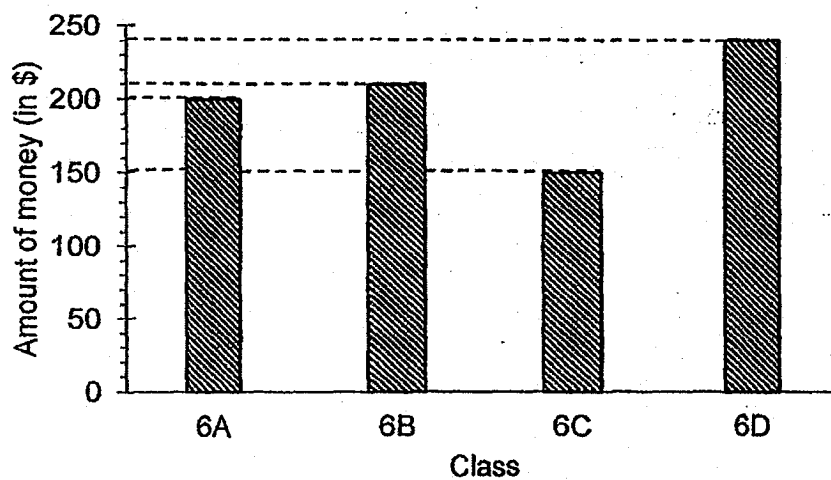
---



For questions 6 to 17, show your working clearly and write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part-question. (45 marks)

6. The bar graph shows the amount of money collected from a charity event by four Primary 6 classes.

Do not write  
in this space



- (a) What was the total amount of money collected by the four classes?
- (b) Class 6E collected \$275 from the charity event. What was the average amount of money collected by the five classes?

Ans: (a) \_\_\_\_\_ [1]

(b) \_\_\_\_\_ [2]

7. There are 42 children in a class. 40% of the boys and 50% of the girls like to eat vegetables. There are 19 children who like to eat vegetables. Find the number of boys in the class.

Do not write  
in this space

Ans: \_\_\_\_\_ [3]

8. There are 30 coins in a bag. They consist of twenty-cent and fifty-cent coins. The total value of the coins is \$9.30. How many twenty-cent coins are these?

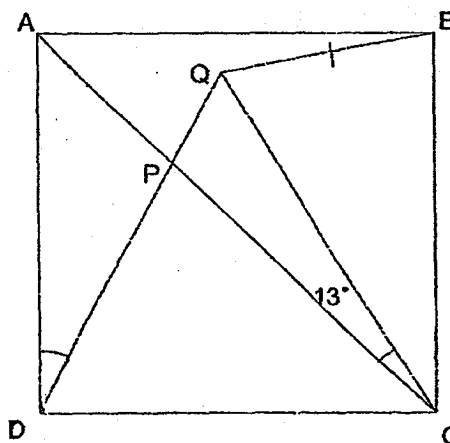
Ans: \_\_\_\_\_ [3]

9. Ali has 210 balls. 20% of them are red. How many red balls must he buy so that 30% of the total balls are red balls?

Do not write  
in this space

Ans: \_\_\_\_\_ [3]

10. ABCD is a square. QPD and APC are straight lines.  $QC = BC$  and  $\angle PCQ = 13^\circ$ . Find  $\angle ADQ$ .



Ans: \_\_\_\_\_ [3]

11. A florist had 66 more stalks of roses than tulips. She sold  $\frac{1}{3}$  of the roses and  $\frac{3}{5}$  of the tulips. She sold 74 more tulips than roses. How many roses and tulips did she have left?

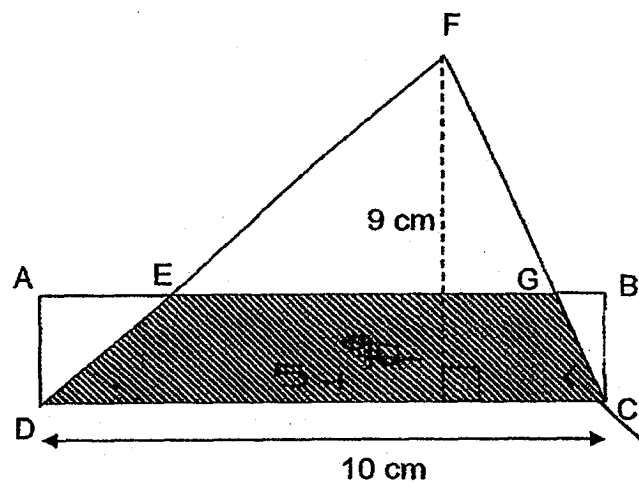
Do not write  
in this space



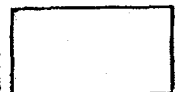
Ans: \_\_\_\_\_ [4]

12. In the figure, ABCD is a rectangle. DC = 10 cm and the height of triangle DFC is 9 cm. The area of the shaded part EGCD is  $\frac{5}{9}$  the area of triangle DFC and the area of the shaded part EGCD is  $\frac{5}{6}$  the area of rectangle ABCD. Find the length of BC.

Do not write  
in this space



Ans: \_\_\_\_\_ [4]



13. Alan had some cards and he gave some to two friends, Ben and Carl.

Alan first gave  $\frac{1}{3}$  of his cards and 8 more cards to Ben.

Alan then gave  $\frac{3}{4}$  of the remainder to Carl and 2 more cards.

In the end, Alan was left with 46 cards. How many cards did Alan have at first?

Do not write  
in this space

Ans: \_\_\_\_\_ [4]

14.

**Nan Hua Furniture Shop**  
**CLEARANCE SALE!**

20%  
OFF  
Storewide

Do not write  
in this space

Mr Rahmat bought a set of sofa and a bed from Nan Hua Furniture Shop.  
The discounted price of the set of sofa was \$240 less than the usual price.  
The discounted price of the bed was \$180 less than the usual price.  
How much did he pay altogether?

Ans: \_\_\_\_\_ [4]

15. Devi bought some red and blue beads to make a necklace.  
The ratio of the number of red beads to the number of blue beads is 3 : 5. After making the necklace, the ratio of the number of red beads to the number of blue beads became 2 : 5. A total of 21 red beads and  $\frac{2}{3}$  of the blue beads were used to make the necklace.  
How many red and blue beads did Devi buy altogether?

Do not write  
in this space

Ans: \_\_\_\_\_ [4]



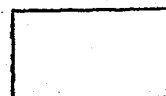
16. Xavier, Yan and Zac wanted to buy a toy. Xavier agreed to pay 40% of the cost of the toy while Yan agreed to pay 30% of the remaining amount. The balance will be paid by Zac. A few days later, they bought the toy. However, the price of the toy increased by 20%. As a result, Xavier paid \$60 for his share.

Do not write  
in this space

- (a) How much did the toy cost before the price increase?  
(b) How much did Zac pay for the toy?

Ans: (a) \_\_\_\_\_ [3]

(b) \_\_\_\_\_ [2]



17. Samuel had some coins. The number of ten-cent coins was  $\frac{2}{5}$  the number of twenty-cent coins. Samuel took out 10 twenty-cent coins from the bag and exchanged them for ten-cent coins of equal value. The ratio of the number of ten-cent coins to the number of twenty-cent coins became 8: 5. How many twenty-cent coins and ten-cent coins did he have at first?

Do not write  
in this space

Ans: No. of ten-cent coins = \_\_\_\_\_

No. of twenty-cent coins = \_\_\_\_\_ [5]

End of Paper