

Word Problem Worksheet
& Solutions

Difficulty: AA-

Nan Hua

P6 Mathematics CA1 2017

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

6. The average mass of a group of boys was 34.5kg. Dave's mass was 40.5 kg. When Dave joined the group, the new average mass was 36kg. How many boys were there in the group at first?

Ans: _____

7. In a school, 40% of the members in volleyball and 60% of the members in golf are boys. The number of members in golf is $\frac{1}{4}$ of the number of members in volleyball. There are 55 more boys in volleyball than in golf. How many members are there in volleyball?

Ans: _____

8. Alice threw her birthday party at an indoor playground. Each child was charged \$25 and each adult was charged \$3. Every child at the party brought 2 adults with them. Alice paid a total of \$1085 for the party. How many children attended the party?

Ans: _____

9. Mr Ho bought some sweets for this pupils. If he gave each pupil 5 sweets, he would be left with 3 sweets. If he gave each pupil 3 sweets, he would be left with 59 sweets. How many pupils did Mr Ho have?

Ans: _____

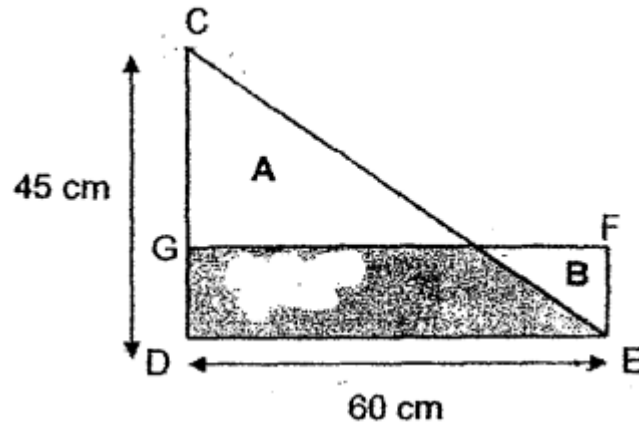
10. A box contained only red and blue beads. 20% of the beads were red. 200 more red beads were put in and the number of red beads increased to 40%. How many beads were there in the box at the end?

Ans: _____

11. Kathy read $\frac{1}{3}$ of a book on Monday. She read 144 pages on Tuesday. The number of pages that she read on Tuesday was $\frac{1}{4}$ less than the number of pages that she read on Monday. How many pages were there in the book?

Ans: _____

12. The figure shown below, not drawn to scale, consists of a triangle CDE and a rectangle DEFG. The area of the unshaded triangle A is 810 cm^2 greater than the unshaded triangle B. What is the length of EF?



Ans: _____

13. Jocelyn spent \$2 less than $\frac{1}{2}$ of her money on a pair of shoes. Then she spent \$3 less $\frac{1}{2}$ of her remaining money on a scarf. She spent the last \$92 on a watch. How much money did Jocelyn have at first?

Ans: _____

14. The total cost of a tennis racket and a basketball is \$158. The sum of 30% of the price of the tennis racket and 25% of the price of the basketball is \$44. What is the price of the tennis racket?

Ans: _____

15. Ailing, Bala, Cindy and Dan shared the cost of a present equally. Bala did not enough money and only managed to pay for half his share. Only Ailing and Cindy helped to pay for the rest of Bala's share. The ratio of the amount of money Ailing paid to the amount of money Cindy paid is 3 : 4. The next day, Bala returned \$24 to Cindy. How much did the present cost?

Ans: _____

16. Mrs Chan bought a blouse and a skirt at a discount. She spent a total of \$73.30 on these two items. She spent \$1.90 less on the blouse than on the skirt.
- (a) How much did she spend on the blouse?
- (b) The total discount given for the two items was \$24.70. She was given a 30% discount for the blouse. What was the percentage discount given for the skirt?

Ans: (a) _____

(b) _____

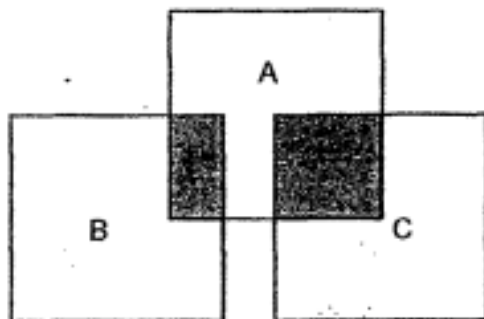
17. A box contained only 20-cent and 50-cent coins. The ratio of the number of 20-cent coins to the number of 50-cent coins was 3 : 2. Fifteen 20-cent coins were taken and replaced with 50-cent coins of the same value. The ratio of the number of 20-cent coins to the number of 50-cent coins became 19 : 18. How much money was there in the box?

Ans: _____

18. The figure below is made up of 3 overlapping identical squares.

$\frac{1}{8}$ of Square B is shaded and $\frac{1}{4}$ of Square C is shaded.

- (a) What fraction of Square A is shaded?
(b) Express the unshaded area as a fraction of the total area. (Leave your answer in the simplest form.)



Ans: (a) _____

(b) _____

Answer Key

Subject: Primary 6 Maths – Word Problem Solutions

Paper: CA1 2017

Grade: AA- Nan Hua

- 6. 3
- 7. 220
- 8. 35
- 9. 28
- 10. 800
- 11. 576
- 12. 9 cm
- 13. \$352
- 14. \$90
- 15. \$224
- 16. a) \$35.70 b) 20%
- 17. \$38.40
- 18. a) $\frac{3}{8}$ b) $\frac{6}{7}$

Solutions provided by <http://www.sgtestpaper.com/>

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

6. The average mass of a group of boys was 34.5kg. Dave's mass was 40.5 kg. When Dave joined the group, the new average mass was 36kg. How many boys were there in the group at first?

$$\text{Difference in average mass} = 36 - 34.5 = 1.5 \text{ kg}$$

Let u = number of boys at first

$$\text{Excess mass} = 40.5 - 36 = 4.5 \text{ kg}$$

$$1.5 u = 4.5$$

$$u = 3$$

Number of boys at first = 3

Ans: 3

7. In a school, 40% of the members in volleyball and 60% of the members in golf are boys. The number of members in golf is $\frac{1}{4}$ of the number of members in volleyball. There are 55 more boys in volleyball than in golf. How many members are there in volleyball?

Let u = number of members in golf

Number of members in volleyball = $4u$

Number of boys in golf = $0.6u$

Number of boys in volleyball = $0.4 \times 4u = 1.6u$

Excess number of boys in volleyball = $1.6u - 0.6u = u = 55$

Members in volleyball = $4u = 4 \times 55 = 220$

Ans: 220

8. Alice threw her birthday party at an indoor playground. Each child was charged \$25 and each adult was charged \$3. Every child at the party brought 2 adults with them. Alice paid a total of \$1085 for the party. How many children attended the party?

Fee for each child plus 2 adults = $25 + 3 + 3 = \$31$

Number of groups = $1085 \div 31 = 35$

Number of children attending the party = 35

Ans: 35

9. Mr Ho bought some sweets for this pupils. If he gave each pupil 5 sweets, he would be left with 3 sweets. If he gave each pupil 3 sweets, he would be left with 59 sweets. How many pupils did Mr Ho have?

Excess number of sweets = $59 - 3 = 56$

Difference in number of sweets per pupil = $5 - 3 = 2$

Number of pupils = $56 \div 2 = 28$

Ans: _____

10. A box contained only red and blue beads. 20% of the beads were red. 200 more red beads were put in and the number of red beads increased to 40%. How many beads were there in the box at the end?

At first, the ratio of red vs blue bead $\rightarrow 1 : 4 \rightarrow 3u : 12u$

At the end, the ratio of red vs blue beads $\rightarrow 40 : 60 \rightarrow 2 : 3 \rightarrow 8u : 12u$

$$8u - 3u = 5u \rightarrow 200$$

$$u = 40$$

$$20u = 20 \times 40 = 800 \text{ beads}$$

Ans: _____

11. Kathy read $\frac{1}{3}$ of a book on Monday. She read 144 pages on Tuesday. The number of pages that she read on Tuesday was $\frac{1}{4}$ less than the number of pages that she read on Monday. How many pages were there in the book?

Let $u = \frac{1}{4}$ of Monday pages

$$\text{Tuesday pages} = 3u = 144$$

$$u = 144 \div 3 = 48$$

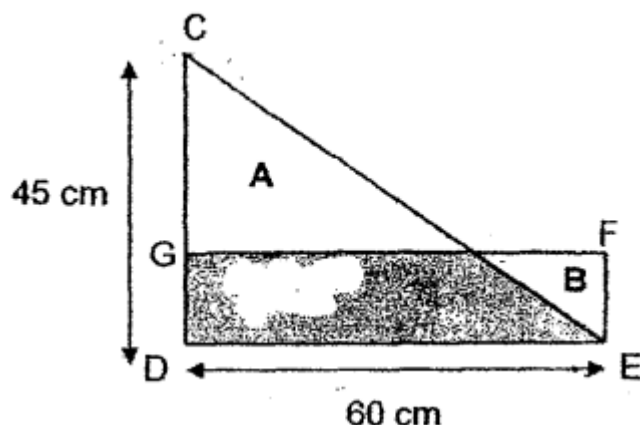
$$\text{Monday pages} = 4u = 4 \times 48 = 192$$

$$\text{Let } p = \frac{1}{3} = 192$$

$$\text{Total pages in book} = 3p = 192 \times 3 = 576$$

Ans: _____

12. The figure shown below, not drawn to scale, consists of a triangle CDE and a rectangle DEFG. The area of the unshaded triangle A is 810 cm^2 greater than the unshaded triangle B. What is the length of EF?



$$\Delta A = \Delta CDE - \square DEFG + \Delta B$$

$$\Delta A - \Delta B = \frac{1}{2} \times 45 \times 60 - \square DEFG = 810$$

$$\square DEFG = 1350 - 810 = 540$$

$$EF = 540 \div 60 = 9 \text{ cm}$$

Ans: _____

13. Jocelyn spent \$2 less than $\frac{1}{2}$ of her money on a pair of shoes. Then she spent \$3 less $\frac{1}{2}$ of her remaining money on a scarf. She spent the last \$92 on a watch. How much money did Jocelyn have at first?

$$\text{Half of remaining money} = 92 - 3 = 89$$

$$\text{Remaining money} = 89 \times 2 = 178$$

$$\text{Half of original money} = 178 - 2 = 176$$

$$\text{Original money at first} = 176 \times 2 = \$352$$

Ans: \$352

14. The total cost of a tennis racket and a basketball is \$158. The sum of 30% of the price of the tennis racket and 25% of the price of the basketball is \$44. What is the price of the tennis racket?

Let t = tennis racket cost

Let b = basketball cost

$$t + b = 158$$

$$\frac{10}{10}t + \frac{4}{4}b = 158 \quad (1)$$

$$\frac{3}{10}t + \frac{1}{4}b = 44 \quad (2)$$

$$\frac{12}{10}t + \frac{4}{4}b = 176 \quad (3) = (2) \times 4$$

$$\frac{2}{10}t = 176 - 158 = 18 \quad (4) = (3) - (1)$$

$$t = 18 \times 10 \div 2 = \$90$$

Ans: \$90

15. Ailing, Bala, Cindy and Dan shared the cost of a present equally. Bala did not enough money and only managed to pay for half his share. Only Ailing and Cindy helped to pay for the rest of Bala's share. The ratio of the amount of money Ailing paid to the amount of money Cindy paid is 3 : 4. The next day, Bala returned \$24 to Cindy. How much did the present cost?

Ratio of A : B : C : D $\rightarrow$ u : u : u : u

Ratio of A+C : B : D $\rightarrow$ 2.5u : 0.5u : u (1)

$\rightarrow$ 35u : 7u : 14u (2) = (1) $\times$ 14

A : C $\rightarrow$ 3 : 4 $\rightarrow$ 15 : 20 $\times$ 5

A : C : B : D $\rightarrow$ 15u : 20u : 7u : 14u

Cindy paid amount minus average amount = 20u – 14u = 6u

6u $\rightarrow$ \$24

u = \$4

Total = 15u + 20u + 7u + 14u = 56u = 56 $\times$ 4 = \$224

Ans: \$224

16. Mrs Chan bought a blouse and a skirt at a discount. She spent a total of \$73.30 on these two items. She spent \$1.90 less on the blouse than on the skirt.

- (a) How much did she spend on the blouse?
(b) The total discount given for the two items was \$24.70. She was given a 30% discount for the blouse. What was the percentage discount given for the skirt?

- (a) Excess amount = \$1.90

$$\text{Cost of discounted blouse} = (73.30 - 1.90) \div 2 = \$35.70$$

- (b) Discount for blouse = $30 \div 70 \times 35.70 = \15.30

$$\text{Discount for skirt} = 24.70 - 15.30 = \$9.40$$

$$\text{Cost of discounted shirt} = 35.70 + 1.90 = \$37.60$$

$$\text{Cost of shirt before discount} = 37.60 + 9.40 = \$47$$

$$\text{Discount of shirt} = 9.40 \div 47 = 20\%$$

Ans: (a) \$35.70

(b) 20%

17. A box contained only 20-cent and 50-cent coins. The ratio of the number of 20-cent coins to the number of 50-cent coins was 3 : 2. Fifteen 20-cent coins were taken and replaced with 50-cent coins of the same value. The ratio of the number of 20-cent coins to the number of 50-cent coins became 19 : 18. How much money was there in the box?

At first, ratio of number of 20-cent vs number of 50-cent coins $\rightarrow 3 : 2 \rightarrow 72u : 48u$

Fifteen 20-cent coins = $15 \times 0.2 = \$3$ = Six 50-cent coins

$72u - 15u : 48u + 6u \rightarrow 57u : 54u$

At end, of number of 20-cent vs number of 50-cent coins $\rightarrow 19 : 18$

$\rightarrow 57u : 54u$

Value of 20-cent coins = $72 \times 0.20 = \$14.40$

Value of 50-cent coins = $48 \times 0.5 = \$24.00$

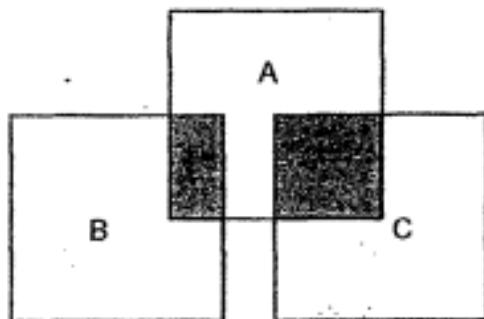
Total money in box = $14.40 + 24 = \$38.40$

Ans: \$38.40

18. The figure below is made up of 3 overlapping identical squares.

$\frac{1}{8}$ of Square B is shaded and $\frac{1}{4}$ of Square C is shaded.

- (a) What fraction of Square A is shaded?
 (b) Express the unshaded area as a fraction of the total area. (Leave your answer in the simplest form.)



- (a) Fraction of Square A shaded = $\frac{1}{8} + \frac{1}{4} = \frac{3}{8}$
 (b) Unshaded area = $(\frac{5}{8} + \frac{7}{8} + \frac{6}{8}) = \frac{18}{8}$ of square
 Total area = $3 - \frac{1}{8} - \frac{1}{4} = \frac{21}{8}$ of square
 Fraction of unshaded area over total area = $\frac{18}{8} \div \frac{21}{8} = \frac{6}{7}$

Ans: (a) $\frac{3}{8}$

(b) _____