THE STUDENT HUB

# Sample Exam 11 - Solutions

**Session 11** **Total: 75 marks**

## SECTION I

1. Write in words, the number that is represented below. [1]

| Tens of Thousands | Thousand | Hundred | Tens | Ones |
|---|---|---|---|---|
| 1 | 8 | 6 | 6 | 0 |

Answer_____ Eighteen thousand, six hundred and sixty _____

2. Form the smallest number using the digits below which is a multiple of 4. [1]

| 4 | 6 | 7 |
|---|---|---|

Smallest: 467 which is not a multiple of 4

476 which is a multiple of 4 since $476 \div 4 = 119$

Answer_____ 476 _____

3. Arrange the fractions in descending order. [1]

$\frac{2}{3}$ , $\frac{1}{6}$ , $\frac{7}{12}$

$\frac{2}{3} = \frac{8}{12}$

$\frac{1}{6} = \frac{2}{12}$

$\frac{7}{12}$

In descending order, which is biggest to smallest, we have $\frac{8}{12}, \frac{7}{12}, \frac{2}{12}$.

Answer_____ $\frac{2}{3}, \frac{7}{12}, \frac{1}{6}$ _____

4. If 0.4 of a number is 140, what is the number? [1]

$0.4 = \frac{4}{10}$

$= \frac{2}{5}$

Number $= 140 \div \frac{2}{5}$

$= 140 \times \frac{5}{2}$

$= 350$

Answer_____ 350 _____

5. Write 45 percent as a proper fraction. [1]

$45\% = \frac{45}{100}$

$= \frac{9}{20}$

Answer_____ $\frac{9}{20}$ _____

6. $12^2 \div 3 = \square \times 4$ [1]

$12^2 \div 3 = 144 \div 3$

$= 48$

$\square \times 4 = 48$

$\square = \frac{48}{4}$

$\square = 12$

Answer_____ 12 _____

7. Complete the number pattern below. [1]

1, 4, 9, 16, ____

Notice that the pattern is square numbers.

$1^2 = 1$

$2^2 = 4$

$3^2 = 9$

$4^2 = 16$

$5^2 = 25$

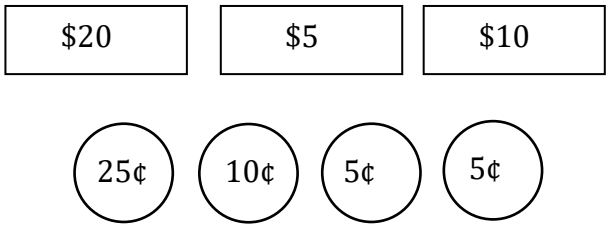
Answer_____ 25 _____

8. Subtract 781 from 2 360. [1]

$$\begin{array}{r} 2\,3\,6\,0 \\ -\quad 7\,8\,1 \\ \hline 1\,5\,7\,9 \end{array}$$

Answer_____ 1 579 _____

9. Omar has the money below in his pocket. How much more money does he need to make $50.00? [1]




Amount of money Omar has = $20 + $5 + $10 + $0.25 + $0.10 + $0.05 + $0.05

= $35.45

Amount of money he needs = $50.00 − $35.45

= $14.55

Answer $ _____ 14.55 _____

10. There are 8 dozen pencils to be shared equally among 3 classes. How many pencils will each class get? [1]

1 dozen = 12 pencils

8 dozen = 12 × 8

= 96 pencils

Number of pencils each class gets = 96 ÷ 3

= 32 pencils

Answer_____ 32 _____ pencils

11. Chelsea has $8.00. Pens are sold at $1.25 each. What is the GREATEST number of pens that Chelsea can buy? [1]

Number of pens = $\frac{\$8.00}{\$1.25}$

= $\frac{800}{125}$

= $\frac{32}{5}$

= $6\frac{2}{5}$

Since Chelsea cannot buy a fraction of a pen, then the greatest number of pens that can be bought is 6.

Answer_____ 6 _____ pens

12. Jake is 1 metre and 7 centimetres tall while Kayla is 34 centimetres taller than Jake.

What is Kayla's height? [1]

| m | cm |
|---|---|
| 1 | 07 |
| | 34 |
| 1 | 41 |

So, Kayla's height is 1 m 41 cm.

Answer_____ 1 ____ m _____ 41 _____ cm

13. Mandy's journey from Rio Claro to Port-of-Spain took 190 minutes. How many HOURS did her journey take? [1]

60 minutes = 1 hour

190 minutes = $\frac{190}{60}$

$= 3\frac{10}{60}$

$= 3\frac{1}{6}$ hours

Answer_____ $3\frac{1}{6}$ _____ hours

14. A bottle of honey has 650 ml. The bottle is poured into 50 ml cups. How many cups are filled? [1]

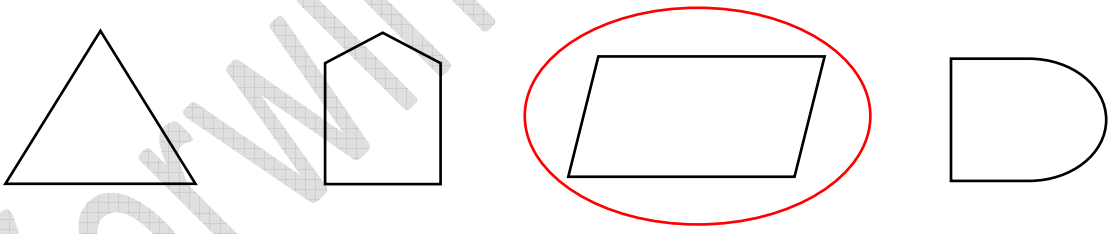
1 cups holds 50 ml.

Number of cups $= \frac{650}{50}$

$= 13$ cups

Answer_____ 13 _____ cups

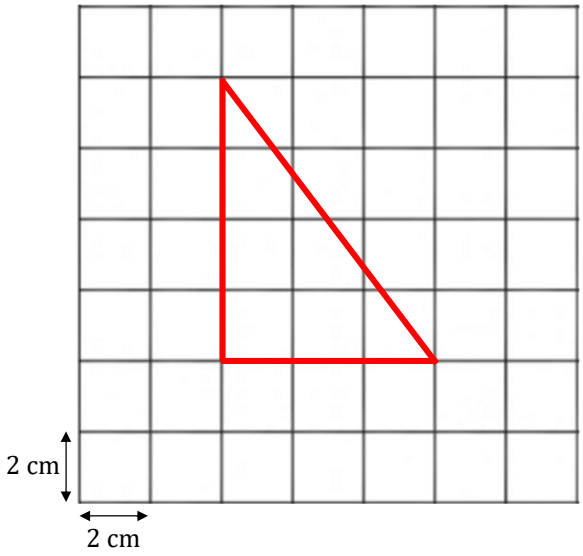
15. Write the name of the shape that is a quadrilateral. [1]



A quadrilateral has four sides.

Answer_____ parallelogram _____

16. Draw a triangle on the 2 cm grid below with an area of 24 $cm^2$. [1]




Area of triangle $= 24\ cm^2$

$= \frac{l \times w}{2}$

Now,

$\frac{l \times w}{2} = 24$

$l \times w = 48$

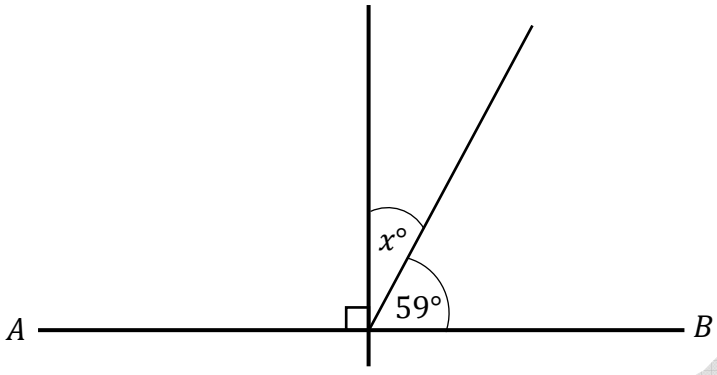
Consider $l = 8$ and $w = 6$.

Since it is a 2 cm grid, the length of triangle would be $\frac{8}{2} = 4$ units

and the width of triangle would be $\frac{6}{2} = 3$ units

Another triangle that can be drawn is 6 by 2.

17. The diagram below shows an angle labelled $x°$. $AB$ is a straight line. [1]




Calculate the value of $x$.

Value of $x = 90° - 59°$

$= 31°$

Answer_____ 31 _____ degrees

18. Calculate the mean of the following cricket scores made by a batter. [1]

| | | | | |
|---|---|---|---|---|
| 37 | 40 | 47 | 70 | 61 |

Total $= 37 + 40 + 47 + 70 + 61$

$= 255$

Mean $= \frac{255}{5}$

$= 51$

Answer_____ 51 _____

19. The table below shows the favourite animal by a class of students. Which animal represents the mode? [1]

| Favourite Animal | Number of students |
|---|---|
| Lion | 17 |
| Panda | 12 |
| Bear | 5 |
| Snake | 12 |
| Crocodile | 4 |

The mode is the most popular.

Most students chose lion as their favourite animal.

Answer_____ lion _____

20. The table below shows the number of students late for school for a week. How many students were late for the week? [1]

| Days | Number of students |
|---|---|
| Monday | 𝍸 \|\|\| |
| Tuesday | 𝍸 \|\| |
| Wednesday | \|\|\|\| |
| Thursday | \|\|\| |
| Friday | 𝍸 𝍸 \|\|\| |

Monday = 8

Tuesday = 7

Wednesday = 4

Thursday = 3

Friday = 13

**Total** = 35

Answer_____ 35 _____ students

## SECTION II

21. How many piece of string of length 0.4 m can be cut from a piece 15.2 m long? [2]

$$\text{Number of pieces of string} = \frac{15.2}{0.4}$$

$$= \frac{152}{4}$$

$$= 38$$

Answer_____ 38 _____ pieces

22. Candice has $24.20. Trisha has $17.50 more than Candice. How much money do they have in all? [2]

$$\text{Trisha has} = \$24.20 + \$17.50$$

$$= \$41.70$$

$$\text{They both have} = \$24.20 + \$41.70$$

$$= \$65.90$$

Answer $_____ 65.90 _____

23. A farmer plants 26 rows of corn. Each row has 16 plants. How many more rows of corn are needed to plant 752 corn plants? [2]

1 row = 16 plants

Number of plants in 26 rows = 26 × 16

= 416

Number of plants that still need to be planted = 752 − 416

= 336

Number of more rows = 336 ÷ 16

= 21 rows

Answer_____ 21 _____ rows

24. At a cupcake parlour, 8 donuts cost \$17.60. What is the cost of $\frac{1}{2}$ dozen donuts? [2]

8 donuts = \$17.60

1 donut = \$17.60 ÷ 8

= \$2.20

Now,

$\frac{1}{2}$ dozen = 6 donuts

6 donuts = \$2.20 × 6

= \$13.20

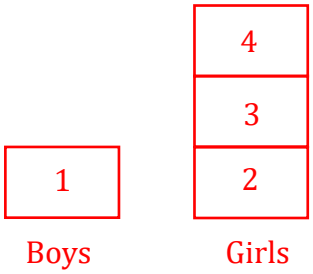
Answer \$_____ 13.20 _____

25. At lunchtime, there were 157 children at a birthday party. By 4:00pm, 37 boys left. The number of girls was triple the number of remaining boys. How many boys were there at the birthday party at the beginning of lunchtime? [3]

Removing the excess:

Number of children around 4:00pm $= 157 - 37$

$= 120$




4 boxes $= 120$ children

1 box $= \frac{120}{4}$

$= 30$ boys

Number of boys present at the beginning of lunchtime $= 30 + 37$

$= 67$ boys

Answer_____ 67 _____ boys

26. A baker puts a total of 53 loaves of bread on 3 shelves. He puts at least 16 on each shelf. Complete the table below. [2]

| Shelf | Loaves of bread |
|---|---|
| 1 | 18 |
| 2 | 17 |
| 3 | 18 |

Shelf 1 has = 18 loaves of bread

Number of loaves of bread in shelf 2 and shelf 3 = 53 − 18

= 35

35 may be distributed into 2 parts, each greater than 16.

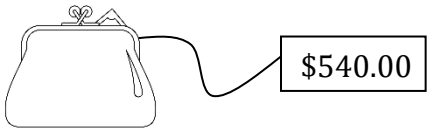
35 ÷ 2 = 17 remainder 1

Shelf 2 = 17 loaves of bread

Shelf 3 = 17 + 1

= 18 loaves of bread

27. A 30% discount was offered on a purse marked $540.00. What is the price after the discount? [2]




Discount = 30% of $540

$= \frac{30}{100} \times 540$

$= \$162$

Cost after discount = $540 − $162

$= \$378$

Answer $_____ 378 _____

28. Mr. Hector wants to buy a television set that costs $1575. He saved $175 each week for 6 weeks. How many more weeks does Mr. Hector need to save to buy the television? [3]

Amount of money he saved $= \$175 \times 6$

$= \$1050$

Amount of money still needed to buy the television set $= \$1575 - \$1050$

$= \$525$

Number of more weeks needed $= \frac{\$525}{\$175}$

$= 3$ weeks

Answer_____ 3 _____ weeks

29. An examination began at 9:30 a.m. and was done in two parts. The first part last 1 hour 40 minutes. The second part last for 1 hour 25 minutes. At what time did the examination finish if there was a 15-minute break after the first part? [2]

Time after first part of the exam:

$$\begin{array}{r} 9:30 \\ +\ 1:40 \\ \hline 11:10 \end{array}$$

Time after 15-minute break:

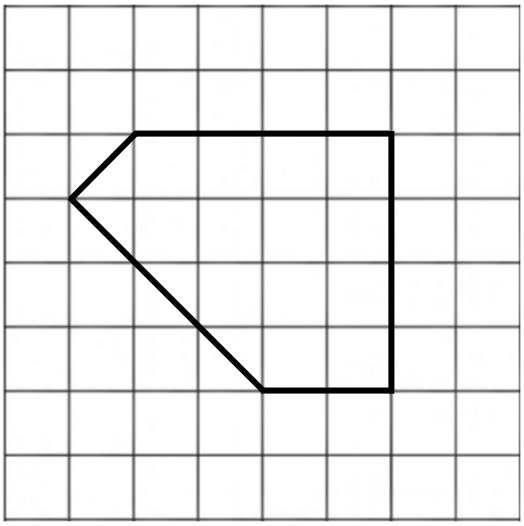
$$\begin{array}{r} 11:10 \\ +\ 0:15 \\ \hline 11:25 \end{array}$$

Time after second part of the exam:

$$\begin{array}{r} 11:25 \\ +\ 1:25 \\ \hline 12:50 \end{array}$$

Answer_____ 12: 50 _____ p.m.

30. Find the area of the shape below if each square measures 2 cm by 2 cm. [3]



Number of whole squares = 13

Number of half squares = 4

This is the same as 2 whole squares.

Number of whole squares = 13 + 2

= 15

Area of 1 whole square = 2 × 2

= 4 $cm^2$

Area of 15 whole squares = 15 × 4

= 60 $cm^2$

Answer_____ 60 _____ $cm^2$

31. A car park charges $7.50 per hour or any part thereof. Jack parks his car from 8:30 a.m. to 12:15 p.m. Calculate the cost for parking his car. [2]

Number of hours:

$$\begin{array}{r} 12:15 \\ -\ 8:30 \\ \hline 3:45 \end{array}$$

Jack parked his car for 3 hours and 45 minutes.

However, he must pay for 4 hours.

Cost for parking his car = $7.50 × 4

= $30

Answer $_____30_____

32. Nicholas has an EQUAL number of $20, $10, $5 and $1 bills.

(a) What is the LEAST amount that Nicholas could have? [1]

The least amount Nicholas would have is 1 bill of each type.

Amount of money = $20 + $10 + $5 + $1

= $36

Answer $_____ 36 _____

(b) If Nicholas has $180.00, how many of EACH type of bill does he have? [2]

One set of bills = $36

Nicholas has $180.

Number of each type of bill he has = $\frac{\$180}{\$36}$

= 5 bills

Answer_____ 5 _____ bills

33. Paul's mother promised to give him \$3.00 for every \$10.00 he saved. Paul saved \$70.00.

(a) How much money does his mother have to give him? [1]

Paul saved \$70.00.

Number of sets of \$10.00 $= \frac{\$70}{\$10}$

$= 7$

Amount of money his mother has to give him $= 7 \times \$3.00$

$= \$21.00$

Answer \$_____ 21.00 _____

(b) How much money would he have altogether? [1]

Total amount $= \$70 + \$21$

$= \$91$

Answer \$_____ 91 _____

34. In a grocery, there are two types of crates. Crate A holds 6 and Crate B holds 12 eggs.

Ms. Daisy bought an equal number of crates (Crate A and Crate B) to hold 198 eggs.

How many crates of each type did she buy? [3]

Number of eggs in the two types of crates = 6 + 12

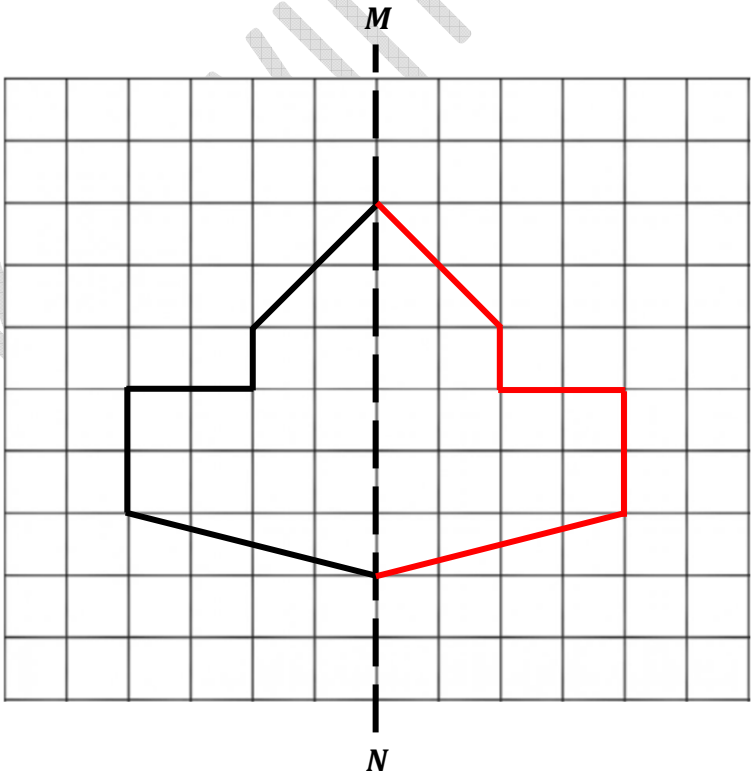
= 18 eggs

Number of crates needed = 198 ÷ 18

= 11

Answer_____ 11 _____ crates

35. Line *M*N is the mirror line. Draw the image of the shape on the grid. [3]



36. Mr. Smith receives a monthly salary of \$10 000. He spends 0.4 of his salary on rent and $\frac{1}{4}$ of the remainder on food. If Mr. Smith saves 20% of the remaining salary each month, how much savings will he have in 6 such months? [3]

Amount spent on rent $= 0.4 \times \$10\,000$

$= \$4\,000$

Remainder of money $= \$10\,000 - \$4\,000$

$= \$6\,000$

$\frac{1}{4}$ of the remainder was spent of food.

Amount spent on food $= \frac{1}{4} \times \$6\,000$

$= \$1\,500$

Amount of salary remaining $= \$10\,000 - (\$4\,000 + \$1\,500)$

$= \$10\,000 - \$5\,500$

$= \$4\,500$

He saved 20% of the remaining salary.

Amount saved $= \frac{20}{100} \times \$4\,500$

$= \$900$

1 month = $900

6 months = $900 × 6

= $5400

Answer $_____ 5400 _____

## SECTION III

37. A group of girl scouts made some cookies to sell. $\frac{3}{10}$ of them were chocolate chip cookies and the rest of them were peanut butter cookies. She sold $\frac{2}{3}$ of the chocolate chip and $\frac{2}{7}$ of the peanut butter. They remained with 72 cookies. How many cookies did they make? [4]

Chocolate chip cookies $= \frac{3}{10}$

Peanut butter cookies $= 1 - \frac{3}{10}$

$= \frac{10}{10} - \frac{3}{10}$

$= \frac{7}{10}$

Fraction of chocolate chip cookies sold $= \frac{2}{3} \times \frac{3}{10}$

$= \frac{2}{10}$

Fraction of peanut butter cookies sold $= \frac{2}{7} \times \frac{7}{10}$

$= \frac{2}{10}$

Fraction of cookies sold $= \frac{2}{10} + \frac{2}{10}$

$= \frac{4}{10}$

Fraction of cookies remaining $= 1 - \frac{4}{10}$

$= \frac{10}{10} - \frac{4}{10}$

$= \frac{6}{10}$

They remained with 72 cookies.

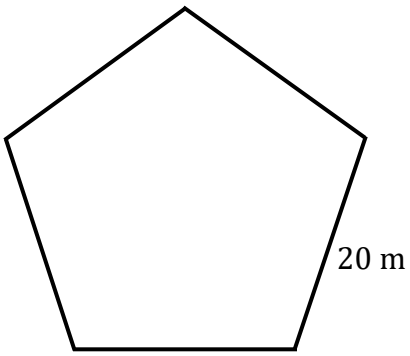
Number of cookies made $= 72 \div \frac{6}{10}$

$= 72 \times \frac{10}{6}$

$= 120$ cookies

Answer_____ 120 _____ cookies

38. A piece of land has to be fenced in the shape of a pentagon as shown below. Each side is 20m long.




(a) Fence posts are placed 4 m apart on the four sides. What is the distance from the 1st to the 9th post? [2]

1st to the 9th post = 8 spaces

Distance = 8 × 4

= 32 m

Answer _____ 32 _____ m

(b) How many posts are needed to fence this piece of land? [2]

Distance around pentagon shape = 20 × 5

= 100 m

Number of posts $= \frac{100}{4}$

$= 25$ posts

Answer_____ 25 _____ posts

39. The following food items were purchased from a Chinese restaurant. The incomplete bill is shown below.

(a) Complete the bill below by inserting in the missing pieces of information. [3]

| Food | Cost per portion | Portion bought | Total |
|---|---|---|---|
| Rice | \$40 | 2 | \$80 |
| Noodles | \$30 | $1\frac{1}{2}$ | (i) \$45 |
| Chow Mein | \$20 | 1 | (ii) \$20 |
| Sweet and Sour chicken | \$80 | $2\frac{1}{4}$ | (iii) \$180 |
| **Total** | | | \$325 |

1 portion of noodles costs \$30

$1\frac{1}{2}$ portions of noodles costs $= \$30 \times 1\frac{1}{2}$

$= \$30 \times \frac{3}{2}$

$= \$45$

1 portion of chow mein costs \$20

1 portion of sweet and sour chicken costs \$80

$= \$80 \times 2\frac{1}{4}$

$= \$80 \times \frac{9}{4}$

$= \$180$

(b) The food was ordered using 'Curb side Pickup' and a 10% service charge was added to the total. What is the total cost of the food? [1]

Cost of food = $325

Amount of Service Charge = 10% of $325

$$= \frac{10}{100} \times \$325$$

$$= \$32.50$$

Total cost of food = $325 + $32.50

$$= \$357.50$$

Answer $_____ 357.50 _____

40. The points scored by Josh for 5 games are given in the table below.

| Game 1 | Game 2 | Game 3 | Game 4 | Game 5 |
|---|---|---|---|---|
| 22 | 49 | 22 | 47 | 65 |

(a) What is the modal number of points scored? [1]

The modal number of points earned is 22 since this occurred more times than any other score.

Answer_____ 22 _____ points

(b) Calculate the mean number of points scored for a game. [1]

$$\text{Mean number of points} = \frac{\text{Total number of points}}{\text{Number of games}}$$

$$= \frac{22+49+22+47+65}{5}$$

$$= \frac{205}{5}$$

$$= 41$$

Answer_____ 41 _____ points

(c) His mean score for 6 games was 44. Calculate his score on Game 6. [2]

The mean score for 6 games is 44.

Total number of points after 6 games $= 44 \times 6$

$= 264$

Score on Games 6 $= 264 - 205$

$= 59$

Answer_____ 59 _____ points