YEAR 7 END TERM 1 REVISION 4

99 marks from 99 questions

Question 1

The next whole number after $m + 3$ is: a. m b. $m + 4$

c. $2m + 3$ d. $m + 1$

Question 2

$3q - p + 10 - 9t$

What is the coefficient of t?

Question 3

Jamila has $k + 3$ counters.

If she doubled her number of counters she would have:

[   ] $k +$ [   ] counters

Question 4

If the number that is 5 less than 30 is 25, what is the number that is 5 less than p?

[   ] – [   ]

Question 5

Start with r, double it and then add 11.

Then you will have:

a. $r + 2 + 11$ b. $2r - 11$ c. $2r + 11$ d. $2(r + 11)$

Question 6

$18 \times n \div 6$

Simply this expression to determine the coefficient of the term.

Coefficient = [   ]

Question 7

There are m books in each box.

Which of the following algebraic expressions best describes the total number of books?

a. $4m + 9b$ b. $13m$ c. $36m$ d. $4m + 9$

Question 8

Each cup contains p counters.

The total number of counters is: [   ] $p + 10$

Question 9

Each large box holds *m* books and each small box contains 20 books. How many books are there altogether?

$\boxed{}$ *m* + $\boxed{}$

Question 10

Each bag contains *g* one-dollar coins.

One bag has a hole so three of its coins were lost.

How many coins remain?

$\boxed{}$ *g* − $\boxed{}$

Question 11

a = 5, *b* = 4 and *c* = 0 therefore:

ab c = $\boxed{}$

Question 12

a = 5, *b* = 2 and *c* = 7 so:

a b + *c* = $\boxed{}$

Question 13

Using *r* = 5 and *m* = 8, find the value of 3 *r* − *m.*

3 *r* − *m* = $\boxed{}$

Question 14

Tanesha's pay for working *t* hours is calculated using this formula.

$P = 12.5t + 50

Calculate how much Tanesha will be paid if she works 15 hours.

P = $\$\boxed{}$
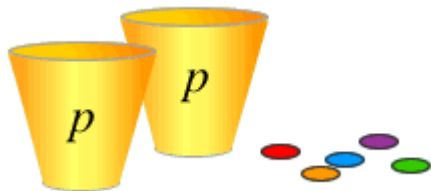
Question 15

There are 2 *p* + 5 counters in the picture.

If *p* = 17, how many counters are there altogether?

Total number of counters = $\boxed{}$

Question 16

If *y* + *z* = 20 and *z* = 9, then *y* = $\boxed{}$

Question 17

If $r = 5$ and $p = 3$, evaluate $r - 4p$.

$$r - 4p = \boxed{} - 4 \times \boxed{}$$
$$= \boxed{} - \boxed{}$$
$$= \boxed{}$$

Question 18

When $r = 5$ and $p = 2$, evaluate $10r - p$.

$$10r - p = 10 \times \boxed{} - 2$$
$$= \boxed{} - 2$$
$$= \boxed{}$$

Question 19

Simplify this expression by collecting like terms:

$$15ab + 5bc - 6ac + 9 + 14ac - 5 - 5bc = \boxed{} ab + \boxed{} ac + \boxed{}$$

Question 20

This is Jun-ho's working for simplifying $7m + 3a - 2ab + 4m$:

$7m + 3a - 2ab + 4m$ ... line 1
$= 7m + 4m + 3a - 2ab$ ... line 2
$= 11m + ab$ ... line 3
$= 12abm$ ... line 4

Jun-ho made mistakes in:

a.   line 1
b.   line 2
c.   line 3
d.   line 4

Question 21

Fill in the missing term: $7a - \boxed{} = a$

Question 22

Fill in the missing term:

$$3a + \boxed{} + 4b = 7a + 4b$$

Question 23

$$3z + 7y - z - 5y = \boxed{} z + \boxed{} y$$

Question 24

$$2m - 3mn + m - 4mn = \boxed{} m - \boxed{} mn$$

Question 25

Fill in the missing term: $\boxed{} + 5n = 21n$

Question 26

Fill in the missing term: $mn + \boxed{} = 5mn$

Question 27

Select *all* correct answers.

3(x + 2) means:

a) 3 groups of (x + 2) b) 3 × (x + 2) c) 3 x + 2

d) x + 2 + x + 2 + x + 2

Question 28

Complete both expansions and collect the like terms.

$$9(b - 1) + 6(4 - b) = 9 b - \boxed{} + 24 - \boxed{} b$$
$$= \boxed{} b + \boxed{}$$

Question 29

You can write 'five groups of (m + 3) lollies, plus 4 more lollies' as:

$\boxed{}$ (m + $\boxed{}$) + $\boxed{}$ lollies

Question 30

Expand this expression and then collect like terms:

$$4(2 a + 5) + 10 = \boxed{} a + \boxed{} + 10$$
$$= \boxed{} a + \boxed{}$$

Question 31

Expand this expression and then collect like terms:

$$7(m + 3) - 5 = \boxed{} m + \boxed{} - 5$$
$$= \boxed{} m + \boxed{}$$

Question 32

$$2(4 - p) = \boxed{} - \boxed{} p$$

Question 33

$$2(6 d + 9) = \boxed{} d + \boxed{}$$

Question 34

Expand this expression and then collect like terms:

$$4 (3 p - 5 n) + 10 n = \boxed{} p - \boxed{} n + 10 n$$
$$= \boxed{} p - \boxed{} n$$

Question 35

The product of two numbers is 36.

If one of the numbers is 3, what is the other number?

[ ]

Question 36

Solve this equation.

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

$$k = \boxed{}$$

Question 37

Solve this equation.
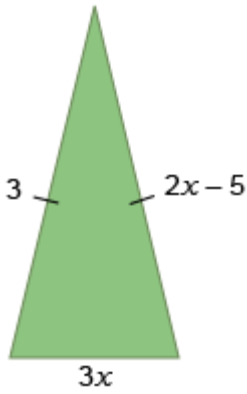
$$2x - 5 = 11$$

$$x = \boxed{}$$

Question 38

Solve this equation. Enter your answer as a *decimal*.
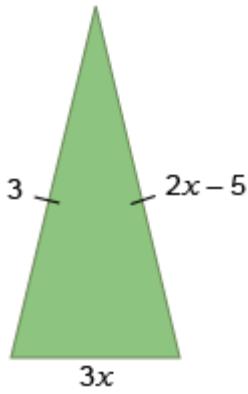
$$10x = 5$$

$$x = \boxed{}$$

Question 39

Select the equation that matches this diagram.

a. ○ $3x = 3$

b. ○ $2x - 5 = 3x$

c. ○ $2x - 5 = 3$

d. ○ $5x - 2 = 3$

Question 40
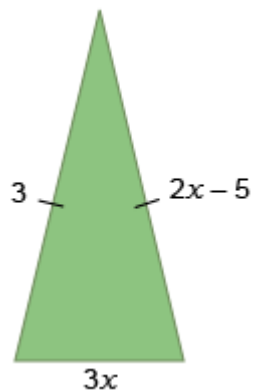

The perimeter of this shape is 18 cm.

Select the equation that represents this fact.

a. ○ $3 = 5x - 5$

b. ○ $5x - 2 = 18$

c. ○ $5x - 8 = 10$

d. ○ $3x = 18$

Question 41

The perimeter of this shape is 18 cm.

How long is the longest side of the triangle?

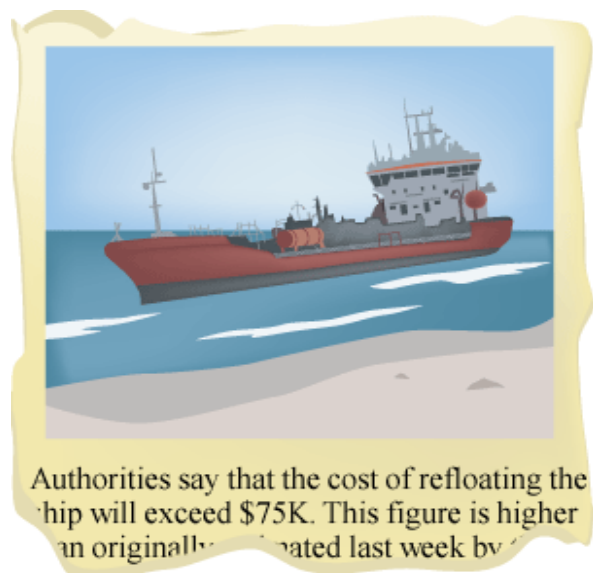longest side = [____] cm

Question 42

Marcus thinks of a number. He multiplies his number by three. He then subtracts fifteen from the result.

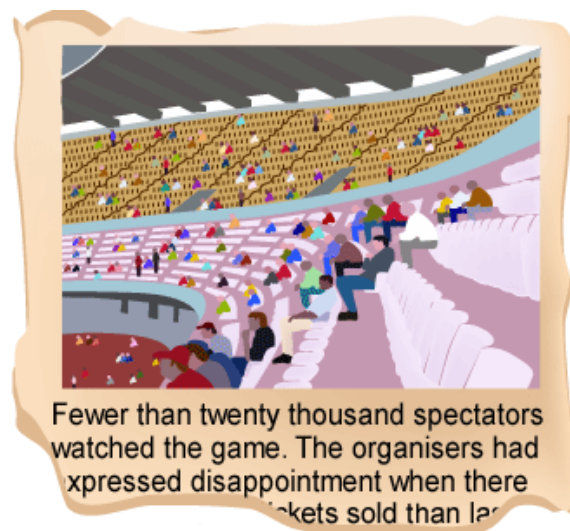The answer is eighteen.

Find the number.

number = [____]

Question 43

Authorities say that the cost of refloating the ship will exceed $75K. This figure is higher an originally ‑ated last week by

This is a cutting from an American newspaper.

Which number sentence is true?

a. ○ Cost > $75 000 000

b. ○ Cost < $7500

c. ○ Cost > $75 000

d. ○ Cost > $750 000

Question 44

Fewer than twenty thousand spectators watched the game. The organisers had xpressed disappointment when there ‑kets sold than la‑

Which number sentence could you write to best describe the size of the crowd?

a. ○ Crowd < 20 000

b. ○ Crowd > 20 000
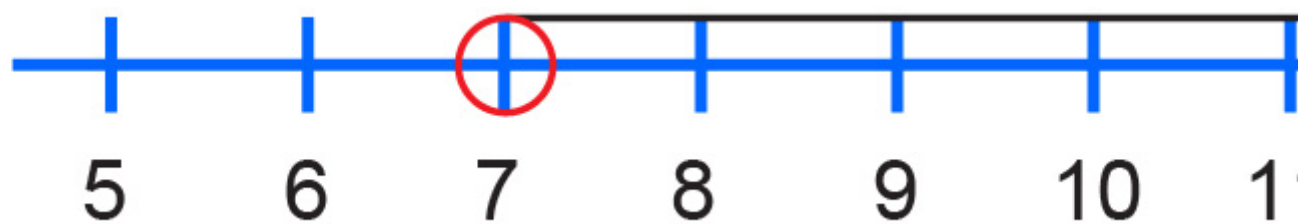
c. ○ Crowd < 200 000

d. ○ Crowd > 200 000

Question 45   Question 46

Ji is travelling to Broken Hill by train. He is told that the mass of his checked luggage must be less than 40 kilograms.

This number line shows an inequality:

Expressed algebraically using x, this inequality is:

a. $x < 7$ b. $x < 11$ c. $x > 7$

Using l to represent the luggage mass, you could write:

a. $l < 40$ kg

b. $l > 40$ kg

Question 47

The solution to an inequality is $w > 5$.

Which of the sets of three numbers satisfies the original inequality?

a. −2, −1, 0 b. 0, 3, 6 c. 6, 10, 20000

d. None of the above

Question 48

$$1 \le p < 2$$

Select the number that is possible value for p. a. 20

b. 5 c. 1 d. 2

Question 49

Which of the following numbers is a solution to $v < 3$?

a. 1 b. 4 c. 5

Question 50

Which of the following numbers is a solution to $y > 4$?

a. 0 b. 4 c. 5

Question 51

Fill in the blanks so that the following terms are consecutive whole numbers.

☐ , k , ☐ , ☐

Question 52

If $a = 3$, then:

$$a^2 + 5a = \boxed{} \times 3 + 5 \times \boxed{}$$

$$= \boxed{} + \boxed{}$$
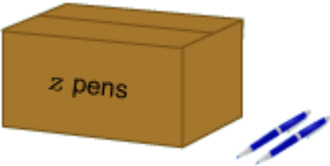
$$= \boxed{}$$

Question 53

The sum of q and 7 is multiplied by 2 and then divided by 5.

The algebraic expression for this sentence is:

a. $\dfrac{2(q+7)}{5}$ b. $\dfrac{2q+7}{5}$ c. $2q + 7 \div 5$ d. $2q + \dfrac{7}{5}$

Question 54

There are m counters in each mug.

Write an algebraic expression for twice the number of counters in the diagram.

$\boxed{} \, m + \boxed{}$

Question 55

Triple the number of pens in the diagram.
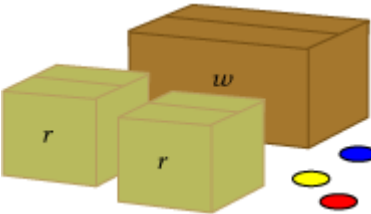

$\boxed{} \, z + \boxed{}$

Question 56

'Triple a number and then halve your answer' could be written in different ways using algebra.

Pick the correct expressions:

a. $3m \div 2$ b. $\dfrac{2m}{3}$ c. $\dfrac{p \times p}{2}$ d. $\dfrac{3w}{2}$

Question 57

$(7 \times a \times b + 9) \div 10 =$ a. $7ab + \dfrac{9}{10}$ b. $\dfrac{7ab+9}{10}$

c. $\dfrac{16ab}{10}$ d. $\dfrac{63ab}{10}$

Question 58

The small boxes each hold r counters and the larger box holds w counters.
How many counters are there altogether?

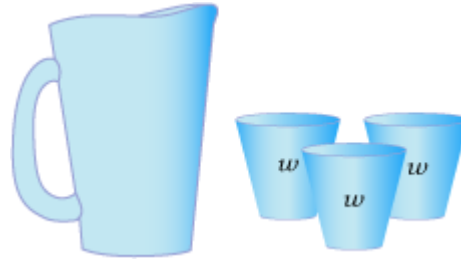$w + 2\boxed{} + 3$

Question 59

The mug holds w mL and the cup can hold t mL.

Nasima filled the empty cup with water from the mug.

How many millilitres of water will still be in the mug?

[ ] − [   ]

Question 60
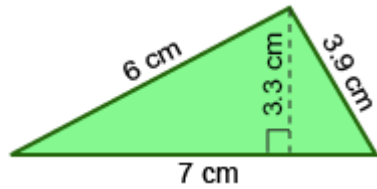

Ibrahim filled three small cups each with w mL of water from his 1 litre jug.

How many millilitres remain in the jug?

[ ] − 3[   ]

Question 61

6 cm

3.3 cm

3.9 cm

7 cm

To find the area of this triangle, what value would you substitute for b in the following formula?

$A = \dfrac{1}{2} bh$

$b = $ [ ]

Question 62

Enter the missing whole number in the answer.

If $m = 7$ and $p = 2$, then:

$3(m + p) = $ [   ]
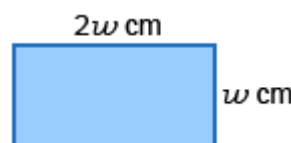
Question 63

The formula for the perimeter of a rectangle is $P = 2(l + w)$

Given that $l = 30$ and $w = 5$, what is the value of P?

$P = $ [   ]

Question 64
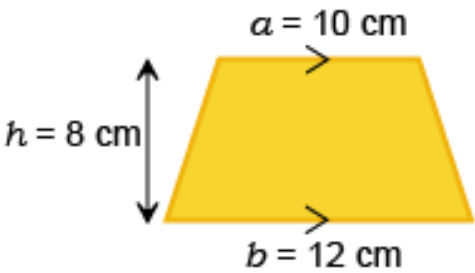

$2w$ cm

w cm

Find the perimeter of this rectangle for $w = 7$.

Perimeter = [   ] cm

Question 65

Complete the working to find the area of this trapezium by first
substituting the correct values into the formula.

$a = 10$ cm

$h = 8$ cm

$b = 12$ cm

$A = \frac{1}{2}(a + b) \times h$

$= \frac{1}{2}(10 + \boxed{}) \times 8$

$= \boxed{} \times 8$

$= \boxed{}$ cm^2

Question 66

The area of any kite is given by the formula:

$A = \frac{1}{2} xy$

where x and y are the the lengths of the diagonals

6 cm

4 cm

Calculate the area of this kite.

Area = $\boxed{}$ cm^2

Question 67

Euler's formula says that, for any solid shape, $V + F = E + 2$.

V is the number of vertices.

F is the number of faces.

E is the number of edges.

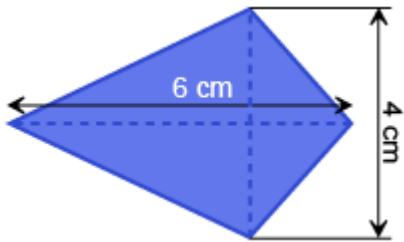A solid has 12 vertices and 30 edges.

How many faces does it have?

Faces = $\boxed{}$

Question 68

v marbles v marbles v marbles
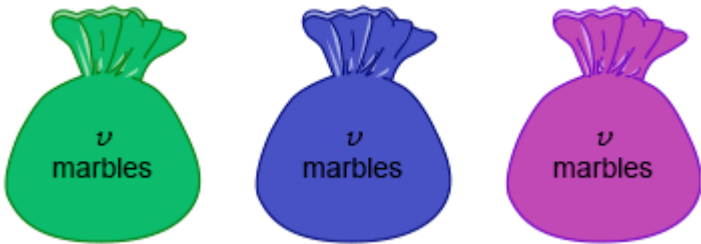
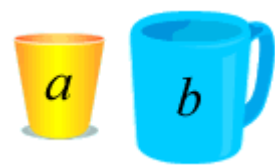Amir had three bags of marbles, each bag containing v marbles. He sold 15 marbles.

Kim had twice as many marbles as Amir.

Which expression represents the number of marbles that Kim had?

a. $3v - 15$ b. $2(3v - 15)$ c. $6v - 30$

d. $6v - 15$ Be sure to select *all* correct answers.

Question 69

The number of counters in the yellow cup $= a$, and the number of counters in the blue mug $= b$
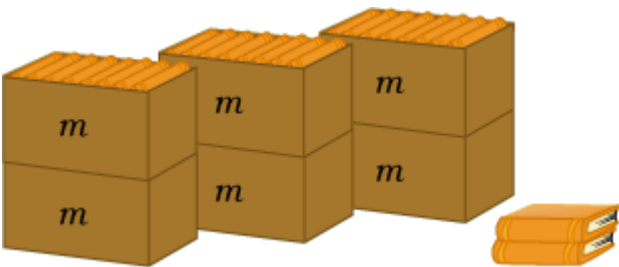

You had three yellow cups plus seven loose counters. Then Jenny gave you two blue mugs and took a yellow cup and four counters.

How many counters do you now have?

$3a + 7 + 2b -$ [____] a [____] $+$ [____] b [____]
$a - 4 =$

Question 70

At the beginning of the day, Readalon Bookshop had two full boxes of their current bestselling book. Each box had m books in it.

During the day, the Bookshop sold 17 books then took delivery of three more boxes of these books.

Which expressions correctly show how many copies of this book are in stock at the end of the day?

a. $2m + 17m + 3$ b. $5m - 17$

c. $m + m - 17 + m + m + m$ d. $2m - 17 + 3m$

Question 71

On Monday, Readalon Bookshop sold five copies of their new travel book and took delivery of two more boxes, each with t books in it. On Tuesday morning they counted the books and found that they had six full boxes plus two spare books.
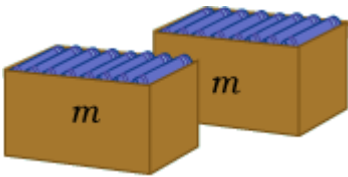

How many books did they start the week with?

[____] $m +$ [____]

Question 72

Jagdeep and Mohan were finding a rule for number patterns.
Jagdeep's answer was $t = 2p + 5 + p$.
Mohan's was $t = 5 + p + p + p$.

If the correct answer is $t = 3p + 5$, then:

a. only Jagdeep was right   b. only Mohan was right

c. they both were right   d. neither was right

Question 73

Sachita and Vashti were finding a rule for number patterns.

Sachita's answer was $y = 5z + 10 - 7z$.

Vashti's was $y = 4z + 5 + 2z + 5$.

If the correct answer is $y = 10 - 2z$, then:

a. only Sachita was right b. only Vashti was right

c. they both were right d. neither was right

Question 74

Elena has four packets, each containing *s* sweets, and she also has two loose sweets.

Kunzang has half as many sweets as Elena, plus an extra five loose sweets. Which algebraic expression describes the number of sweets Kunzang has? (Be sure to select all correct answers.)

a. $\dfrac{4s + 7}{2}$ b. $\dfrac{4s + 2}{2} + 5$ c. $2s + \dfrac{7}{2}$

d. $2s + 6$

Question 75

The number of counters in a yellow cup $= a$, and the number of counters in a blue mug $= b$.

You started with five yellow cups and five blue mugs. John took a blue cup and gave you ten loose counters and two yellow cups. Then Jeff gave you another yellow cup, but took four loose counters.

Which of the following expressions describes the number of counters you have?

a. $5a + 5b - b + 10 + 2a + a - 4$

b. $10ab + 10b + 2a + 4a$

c. $8a + 4b + 6$

d. $7a + 4b + 10 + a - 4$

Question 76

Say you have 4 boxes of pens plus 24 loose pens, described as $4z + 24$ pens.
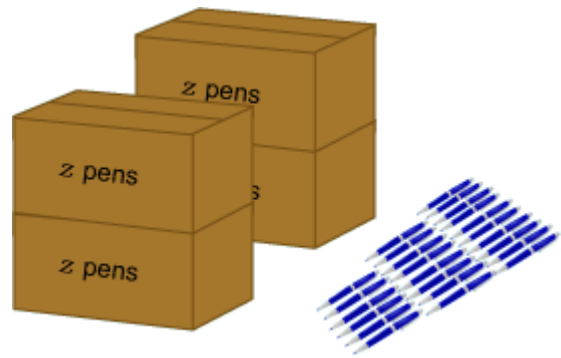
If you sell half the pens, then the number of pens remaining is:

$\dfrac{1}{2}(4z + 24) = \boxed{}\ z + \boxed{}$

Question 77

$$4(2g - 10) + 5(3 - g) = \boxed{}\, g - \boxed{} + \boxed{} - \boxed{}\, g$$

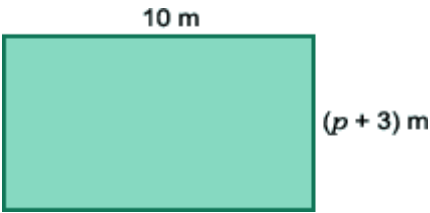$$= \boxed{}\, g - \boxed{}$$

Question 78

$-4(3m + 5)$ means $-4 \times (3m + 5)$.

Select the correct expansion.

$-4(3m + 5) =$

a. ○ $12m + 20$

b. ○ $12m - 20$

c. ○ $-12m - 20$

d. ○ $-12m + 20$

Question 79

10 m

(p + 3) m

A rectangle has length 10 m and width $(p + 3)$ m.

Area of rectangle (in m²) $= \boxed{}(p + \boxed{})$

$= \boxed{}\, p + \boxed{}$

Question 80

$$3(b + 2) + 4(b - 5) = \boxed{}\, b + \boxed{}\, b + \boxed{}\, b - \boxed{}$$

$$= \boxed{}\, b - \boxed{}$$

Question 81

A rectangle was cut in half along the diagonal to form a triangle.
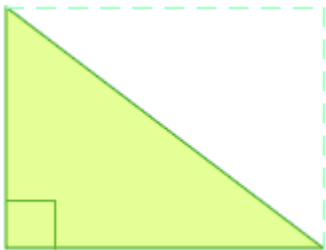
The area of the triangle is $(2w + 10)$ cm². What was the area of the rectangle?

Area $= (\boxed{}\, w + \boxed{})$ cm²

Question 82

$$-7(z + 3) = -\boxed{}\, z - \boxed{}$$

Question 83

$$12e + 12(e - 6) + e = 12e + \boxed{} e - \boxed{} + e$$
$$= \boxed{} e - \boxed{}$$

Question 84

A number is divided by 8 and then the answer is doubled.

If the final result is 10, what was the original number?

$\boxed{}$

Question 85

$$\frac{3y}{2} + 5 = 13$$

Is $y = 4$ the solution to this equation?

a. ○ Yes

b. ○ No

Question 86

Solve this equation.

$$8 - y = 10$$

$y = \boxed{}$

Question 87

$3n + 4$

13
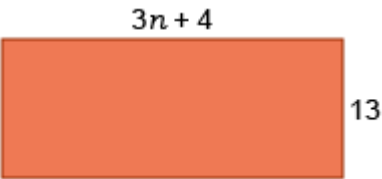
The area of this rectangle is 325 square units.

Determine the value of n.

$n = \boxed{}$

Question 88

Solve this equation.

$$\frac{x + 4}{2} = 5$$

$x = \boxed{}$

Question 89

$3x$

$x + 30$

$x + 10$
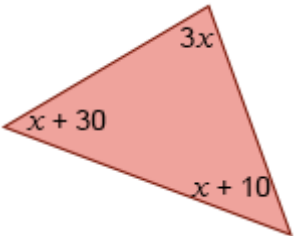
Select the equation that represents this diagram.

a. ○ $3x = x + 10$

b. ○ $5x = 40$

c. ○ $5x + 40 = 180$

d. ○ $3x = 2x + 140$

Question 90

A triangle has angles of $3x°$, $(4x - 15)°$ and $(x + 51)°$.

Work out the size of each angle.

Enter the angles in order of size from smallest to largest.

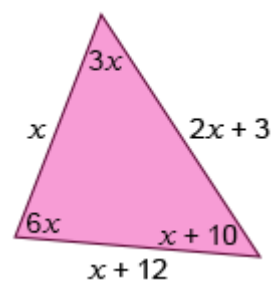$\boxed{}°$, $\boxed{}°$ and $\boxed{}°$

Question 91

Find the perimeter of this shape. All lengths are given in centimetres.

Perimeter = [   ] cm

Question 92

Hanneke drew a polygon which was neither a triangle nor a quadrilateral.

Using n to represent the number of sides of her polygon:

$n >$ [   ]

Question 93

c is a whole number.

If $c > 6$ and also $c < 8$, then $c =$ [   ]

Question 94

In the set of numbers {10, 20, 30, 40} the number which cannot be used to solve the inequality $18 \leq q < 45$ is:
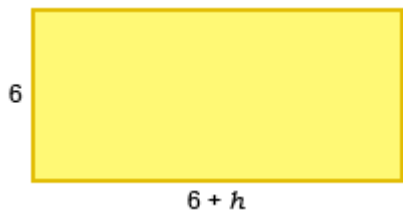
[   ]

Question 95

x is a negative number. Which of these inequalities is true?

a. $x < 0$ b. $x > 0$

Question 96

$20 > y$ is the same expression as: a. $y > 20$ b. $y < 20$

Question 97

$a > 5$ and $b > 4$.

What integer is possible for b that is not possible for a ?

[   ]

Question 98

The width of this rectangle is 6 cm. The length is h cm longer than the width.

The perimeter of the rectangle is less than 48 cm.

Complete this inequality for the value of h :

$h <$ [   ]

Question 99

$v > 8$

Which of the following values are in the range of solutions for this inequality?

Choose all correct answers.

a. 0 b. 1 c. 8 d. 102