

Placement Paper 2010 for CTS

Instructions:

1. There are 70 Questions and time allotted is 70 minutes.
2. Correct answer carry one mark and wrong answer carry -1/4 marks
3. **Verbal section** (25 questions - 25 mins)
4. **Analytical Section** (25 questions – 30 mins)
5. **Reasoning Section** (20 questions – 20 mins)

Verbal section (25 questions - 25 mins)

Directions for Questions 1-5: Read the passage and answer the questions that follow on the basis of the information provided in the passage.

Work expands so as to fill the time available for its completion. The general recognition of this fact is shown in the proverbial phrase, 'It is the busiest man who has time to spare'. Thus, an elderly lady at leisure can spend the entire day writing a postcard to her niece. An hour will be spent in writing a postcard, another hunting for spectacles, half an hour to search for the address, an hour and a quarter in composition and twenty minutes in deciding whether or not to take an umbrella when going to the pillar box in the street. The total effort that could occupy a busy man for three minutes, all told may in this fashion leave another person completely exhausted after a day of doubt, anxiety and toil.

1. What happens when the time to be spent on some work increases?

- A) the work is done smoothly.
- B) the work is done leisurely.
- C) work consumes all the time.
- D) The work needs additional time.

Answer: C

2. Explain the sentence: '*work expands so as to fill the time available for its completion*'.

- A) The more work there is to be done, the more time needed.
- B) Whatever time is available for a given amount of work, all of it will be used.
- C) If you have more time you can do some work.
- D) If you have some important work to do, you should always have some additional time.

Answer: B

3. Who is the person likely to take more time to do work?:

- A) a busy man.
- B) a man of leisure.
- C) an elderly person.
- D) an exhausted person

Answer: B

4. What is the total time spent by the elderly lady in writing a postcard?

- A) Three minutes.
- B) four hours and five minutes.

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- C) half day
- D) the entire day.

Answer: D

5. What does the expression 'pillar box' stand for?

- A) a box attached to the pillar.
- B) a box in the pillar
- C) box office.
- D) a pillar type postbox.

Answer: D

Directions for Questions 6-10: Read the passage and answer the questions that follow on the basis of the information provided in the passage.

According to Albert Einstein the non mathematician, is seized by a mysterious shuddering when he hears of 'four-dimensional' things, he is seized by a feeling, which is very similar to the thoughts awakened by the occult. And at the same time the statement that the world in which we live is a four-dimensional space - time continuum is quite a common place statement.

This might lead to an argument regarding the use of the term "commonplace" by Einstein. Yet the difficulty lies more in the wording than the ideas. Einstein's concept of the universe as a four-dimensional space-time continuum becomes plain and clear, when what he means by "continuum" becomes clear. A continuum is something that is continuous, A ruler, for example, is a one-dimensional space continuum. Most rulers are divided into inches and frWASLions, scaled down to one-sixteenth of an inch.

Will it be possible to conceive a ruler, which is calibrated to a millionth or billionth of an inch. In theory there is no reason why the steps from point to point should not be even smaller. What distinguishes a continuum is the frWASL that the space between any two points can be sub-divided into an infinite number of smaller divisions.

A railroad track is a one-dimensional space continuum and on it the engineer of a train can describe his position at any time by citing a single co-ordinate point - i.e., a station or a milestone. A sea captain, however, has to worry about two dimensions. The surface of the sea is a two-dimensional continuum and the co-ordinate points by which sailor fixes his positions in his two dimensional continuum are latitude and longitude. An airplane pilot guides his plane through a three - dimensional continuum, hence he has to consider not only latitude and longitude, but also his height above the ground. The continuum of an airplane pilot constitutes space as we perceive it. In other words, the space of our world is a three-dimensional continuum.

Just indicating its position in space is not enough while describing any physical event, which involves motion. How position changes in time also needs to be mentioned. Thus to give an accurate picture of the operation of a New York - Chicago express, one must mention not only that it goes from New - York to Albany to Syracuse to Cleveland to Toledo to Chicago, but also the times at which it touches each of those points. This can be done either by means of a timetable or a visual chart. If the miles between New York and Chicago are plotted horizontally on a piece of ruled paper and the hours and minutes are plotted vertically, then a diagonal line properly drawn across the page illustrates the progress of the

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train in two-dimensional space - time continuum. This type of graphic representation is familiar to most newspaper readers; a stock market chart,

For example, pictures financial events in a two - dimensional dollar - time continuum. Similarly for the best picturisation of the flight of an airplane from New York to Los Angeles a four - dimensional space - time continuum is essential. The latitude, longitude and altitude will only make sense to the traffic manager of the airline if the time co - ordinate is also mentioned. Therefore time is the fourth dimension. If a flight has to be looked at, perceived as a whole, it wouldn't work if it is broken down into a series of disconnected take - offs, climbs, glides, and landing, it needs to be looked at and perceived as a continuous four - dimensional space - time continuum curve.

6. The significant feature of a continuum, according to the passage, revolves around
- A) The divisibility of the interval between any two points.
 - B) An ordinary ruler's caliber for marking
 - C) It's unending curve
 - D) It's lucid from providing comprehensibility to the non - scientists as well
 - E) It's variety of co - ordinates.

Answer: A

7. The purpose of this passage is to highlight the point that
- A) Plots and sea captains have something in common
 - B) Stock market charts may be helpful to physicists
 - C) The fourth dimension is time.
 - D) Non-mathematician's are often afraid of the commonplace
 - E) There is a marked quality to distance

Answer: C

8. According to the passage, an airlines traffic manager depends upon all of the following EXCEPT
- A) latitude
 - A) altitude
 - B) The time co-ordinate
 - C) Longitude
 - D) The continuous curve in co four

Answer: E

9. The underlying tone of this selection is
- A) Persuasive
 - B) Deferential
 - C) Candid
 - D) Instructive
 - E) Gently condescending

Answer: D

10. According to the author if one wishes portray a physical event in which motion plays a role - one has to:
- A) Make use of a time-table
 - B) Indicate how position changes in time
 - C) Be conversant with the scientist's theories
 - D) Describe it graphically

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E) Be aware of altitude, latitude and longitude

Answer: B

Directions for Questions 11-12: Read each sentence to find if there is any grammatical error in it. If there is any error, it will be only one part of the sentence. The number or alphabet of that part is your answer. (Disregard punctuation errors if any)

11. I never have / visited / or intend to visit / foreign countries /
A B C D

Answer: C

12. The clothes / were neatly / hanged /on the cloth line.
A B C D

Answer: C

Directions for Questions 13-15: one of the four sentences given in each question is grammatically wrong . Find the incorrect sentence.

13

- A) Our followers are but a handful.
- B) Neither he nor I was there.
- C) Many a glorious deeds were done.
- D) Everyone of the boys loves to ride.

Answer: C

14

- A) She had finished her work when I met her.
- B) Do you believe in God?
- C) He cut his hand with a knife.
- D) He challenged me for a duel.

Answer: D

15

- A) Sumit is my elder brother.
- B) He is two years younger to me.
- C) He is the eldest man of this village.
- D) Ravi is five years older than me.

Answer: C

Directions for Questions 16-20: In each of the following questions, some sentence are given which are on the same theme. decide which sentence is the most preferable with respect to grammar; meaning and usage, suitable for formal writing in English. Find the correct sentence.

16

- A) From which train did you come?
- B) A series of incidents have taken place.
- C) It is a five--men committee.
- D) This pronunciation is peculiar to Bengalis.

Answer: D

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17

- A) They have placed order for books.
- B) He has applied for lectureship.
- C) The river has overflowed its bank.
- D) Give me rupees two and a half.

Answer: D

18

- A) The proceeds of the charity show are for riot victims
- B) He asked Ajay and I to go.
- C) The weather of this place does not suit me.
- D) Either Rajesh or his friends has done it.

Answer: A

19

- A) It is far too hard an essay for me to attempt.
- B) It is too far hard an essay to attempt for me.
- C) Too far it is an essay hard for me to attempt.
- D) It is too hard an essay for me to far attempt

Answer: D

20.

- A) Hoping to be hearing from you, I remain yours sincerely.
- B) Hoping to hear from you, I remain yours sincerely.
- C) Hoping to have heard from you, I sincerely remain yours.
- D) Sincerely I remain yours hoping to be hearing from you.

Answer: B

Directions for Questions 21-25: In each of the following questions, a paragraph or a sentence has been broken up into different parts. The parts have been scrambled and numbered as given below. Choose the correct order of these parts from the given alternatives.

21. 1) I 2)do 3) a 4) of 5) in 6) lot 7) reading 8) my 9) time 10) free

- A. 1, 2, 3, 6, 4, 7, 5, 10, 8, 9
- B. 1, 2, 6, 3, 4, 7, 5, 8, 10, 9
- C. 1, 2, 3, 6, 7, 4, 5, 8, 10, 9
- D. 1, 2, 3, 6, 4, 7, 5, 8, 10, 9

Answer: D

22. 1) on to 2) seat 3) evening 4) Edinburgh 5)the 6) booked 7) flight 8) a 9) time 10)to

- A. 9, 6, 8, 2, 1, 5, 3, 7, 10, 4
- B. 9, 6, 8, 1, 2, 5, 3, 7, 10, 4
- C. 9, 3, 8, 2, 1, 5, 6, 7, 10, 4
- D. 9, 6, 1, 2, 5, 8, 3, 7, 10, 4

Answer: A

23. 1) I 2) my 3) leg 4) to 5)hire 6) gardener 7) when 8) a 9) had 10) I 11) broke

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- A. 1, 9, 4, 5, 8, 6, 7, 10, 11, 3, 2
- B. 1, 9, 4, 5, 11, 6, 8, 10, 7, 2, 3
- C. 1, 9, 4, 5, 8, 6, 7, 10, 11, 2, 3
- D. 1, 4, 9, 5, 8, 6, 7, 10, 11, 2, 3

Answer: C

24. 1) She 2) trust 3) Don't 4) because 5) is 6) her 7) lying

- A. 1, 5, 2, 3, 4, 6, 7
- B. 3, 2, 6, 4, 1, 5, 7
- C. 3, 2, 6, 4, 1, 5, 7
- D. 3, 2, 6, 1, 4, 5, 7

Answer: B

25. 1) rent 2) a 3) has 4) room 5) in 6) house 7) she 8) to 9) rent

- A. 7, 3, 2, 4, 1, 8, 5, 9, 6
- B. 7, 3, 1, 4, 8, 2, 5, 9, 6
- C. 7, 3, 2, 4, 8, 1, 5, 9, 6
- D. 7, 3, 2, 4, 8, 1, 5, 6, 9

Answer: C

Aanalytical section (25 Questions - 30 mins)

Directions for Questions 1-5:

There are five friends Sachin, Kunal, Mohit, Anuj and Rohan. Sachin is shorter than Kunal but taller than Rohan. Mohit is tallest. Anuj is a little shorter than Kunal and little taller than Sachin.

1. Who is the shortest?

- (a) Rohan
- (b) Sachin
- (c) Anuj
- (d) Kunal
- (e) None of these

Answer: A

Solution: Order is: Mohit > Kunal > Anuj > Sachin > Rohan

2. If they stand in the order of their heights, who will be in the middle?

- (a) Kunal
- (b) Rohan
- (c) Sachin
- (d) Anuj
- (e) None of these

Answer: D

3. If they stand in the order of increasing heights, who will be the second?

- (a) Anuj
- (b) Sachin
- (c) Rohan

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- (d) Kunal
- (e) None of these

Answer: B

4. Who is the second tallest?

- (a) Sachin
- (b) Kunal
- (c) Anuj
- (d) Rohan
- (e) None of these

Answer: B

5. Who is taller than Anuj but shorter than Mohit?

- (a) Kunal
- (b) Rohan
- (c) Sachin
- (d) Date Inadequate
- (e) None

Answer: A

Directions for Questions 6-10:

Answer the following questions:

6. A group of friends goes for dinner and gets bill of Rs 2400. Two of them says that they have forgotten their purse so remaining make an extra contribution of Rs 100 to pay up the bill. Tell the no. of person in that group.

Answer: 8 persons

Solution: Let no of person = x

So their individual bill = $2400/x$

Rest 6 make extra contribution of 100 so contribution by rest 6 = $2400/x + 100$

$6 \times (2400/x + 100) = 2400$

or, $2400/x = 300$

or $x = 8$

7. Given the following functions

(1) $f(n a b c) = ac$ if $n=1$

(2) $f(n a b c) = f(n-1 a c b) + f(1 a b c) + f(n-1 b a c)$ if $n > 1$

Then what is the value $f(2 a b c) = ?$

Answer: $ab + ac + bc$

Solution: $f(2 a b c) = f(1 a c b) + f(1 a b c) + f(1 b a c)$

or, $f(2 a b c) = ab + ac + bc$

8. There are 600 tennis players 4% wear wrist band on one wrist. Of the remaining, 25% wear wrist bands on both hands How many players don't wear a wrist band?

Answer: 432

Solution: Number of players wearing band on one wrist = $600 \times 4/100 = 24$

Number of players wearing band in both wrist = $(600-24) \times 25/100 = 144$

So number of peoples not wearing band = $600 - 24 - 144 = 432$

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9. Three types of tea the a,b,c costs Rs. 95/kg,100/kg and70/kg respectively. How many kgs of each should be blended to produce 100 kg of mixture worth Rs.90/kg, given that the quantities of b and c are equal

- A) 70,15,15
- B) 50,25,25
- C) 60,20,20
- D) 40,30,30

Answer: B

Solution: Let quantities of a b and c are x y and y kg respectively.

So, $x + 2y = 100$ (i)

And Total Cost = $95x + 100y + 70y$

i.e. $95x + 170y$

So, $(95x + 170y) / 100 = 90$

or, $95x + 170y = 9000$ (ii)

From (i) and (ii)

$x = 50$ and $y = 25$

10. If all the 6 are replaced by 9, then the algebraic sum of all the numbers from 1 to 100(both inclusive) varies by

Answer: 330

Solution:

If 6 are replace by 9 then 6,16,26,36,46,56,60,61,62,63,64,65,66,67,68,69,76,86,96 numbers will be changed.

Total numbers in which 6 occurs in unit place = 10

It will affect the addition be $10 \times 3 = 30$

Total numbers in which 6 occurs in unit place = 10

It will affect the addition be $10 \times 30 = 300$

So the sum will increase by $30 + 300 = 330$

Directions for Questions 11-15: Each question given below has a problem and two statements numbered I and II giving certain information. You have to decide if the information given in the statements are sufficient for answering the problem. Indicate your answer as

- (a) if the data in statement I alone are sufficient to answer the question;
- (b) if the data in statement II alone are sufficient to answer the question;
- (c) if the data in either in I or II alone are sufficient to answer the question;
- (d) if the data even in both the statements together are not sufficient to answer the question;
- (e) if the data in both the statements together are needed;

11. Among four brothers - Anil, Pawan, Neeraj, and Sahil, who is the heaviest?

- I) Anil and Pawan are of the same weight
- II) Pawan weighs more than Neeraj, but less than Sahil

Answer: E

Solution: From statement I alone we cant conclude

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From statement II alone we cant conclude

If we use both the statement we can conclude that Sahil is the heaviest.

12. Who is C's partner in a game of cards involving four players A, B, C and D ?

- I) D is sitting opposite to A
- II) B is sitting right of A and left of D.

Answer: C

Solution: both the data are insufficient as we don't know partners sit opposite to each other or besides.

13. What is Gagan's age?

- I) Gagan, Vimal and Kunal are all of the same age
- II) Total age of Vimal, Kunal and Anil is 32 and Anil is as old as Vimal and Kunal together.

Answer: E

Solution: If we Use both statement let Gagan Vimal and Kunal's age be x

Let Anil's age be y.

$$2x + y = 32$$

$$y = x + x = 2x$$

$$\text{So, } x = 8 \text{ and } y = 16$$

Hence Gagan's age is 8

14. How much amount Ronnie required to pay for the new car in the buy-back scheme?

- I) The cost of the new car was three times the cost price of his old car
- II) His old car was valued at Rs. 25000 under buy-back scheme

Answer: E

Solution: we need both statement to conclude that new car costs 75000.

15. In which year was Rahul born?

- I) Rahul at present is 25 years younger to his mother
- II) Rahul's brother, who was born in 1964, is 35 years younger to his mother.

Answer: E

Solution: We need both satatements.

Since Rahul's brother was born on 1964

Rahul's mother was born on $1964 - 35 = 1929$

Rahul was born on $1929 + 25 = 1954$

Directions for Questions 16-20: Convert the given binary numbers.

16. $(11111011)_2 = ()_8$

Answer: $(373)_8$

Solution: Divide it in triplet.

$$(011 \ 111 \ 011)_2 = (3 \ 7 \ 3)_8$$

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17. $(11011110110010101101)_2 = ()_{16}$

Ans: (DECAD)₁₆

Solution: Divide in fours

$$(1101\ 1110\ 1100\ 1010\ 1101)_2 = (D\ E\ C\ A\ D)_{16}$$

Note: A = 10(1010) B = 11(1011) C = 12(1100) D = 13(1101) E = 14(1110) F = 15(1111)

18. $(11010101)_2 = ()_{10}$

Answer: (213)₁₀

Solution: $1 \times 2^7 + 1 \times 2^6 + 0 \times 2^5 + 1 \times 2^4 + 0 \times 2^3 + 1 \times 2^2 + 0 \times 2^1 + 1 \times 2^0 = 213$

19. $(11100111)_2 = ()_8$

Answer: (347)₈

Solution: $(011\ 100\ 111)_2 = (3\ 4\ 7)_8$

20. $(1100010101010010001)_2 = ()_8$

Answer: (1425221)₈

Solution: $(001\ 100\ 010\ 101\ 010\ 010\ 001)_2 = (1\ 4\ 2\ 5\ 2\ 2\ 1)_8$

Direction for Questions 21-25: A cube painted red on two adjacent faces and black on the faces opposite to the red faces and green on the remaining faces is cut into sixty-four smaller cubes of equal size.

21. How many cubes are there which have no face painted?

- A) 0 B) 4 C) 8 D) 6

Answer: C

Solution: Number of cubes with no face painted = All internal cubes = $2^3 = 8$

22. How many cubes have only one face painted?

- A) 8 B) 16 C) 24 D) 32

Answer: C

Solution: Number of such cubes = $6 \times 4 = 24$. As all the cubes in the edges will have more than one color.

23. How many cubes have less than three faces painted ?

- A) 80 B) 24 C) 28 D) 48

Answer: D

Solution: Number of cube having 3 faces painted = 8 (at each corner)

Number of cubes having at least one face painted = $64 - 8 = 56$

Number of cubes having less than three faces painted = $56 - 8 = 48$

24. How many cubes are there with three faces painted ?

- A) 4 B) 8 C) 16 D) 24

Answer: B

Solution: Number of cube having 3 faces painted = 8 (at each corner)

25. How many cubes have one face green and one of the adjacent faces black or red?

- A) 8 B) 16 C) 24 D) 28

Answer: C

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Solution: Number of such cubes = All cubes at the edge of green faces.
= $12 \times 2 = 24$

Reasoning section (20 Questions- 20 mins)

Directions for Questions 1-4: In each questions below are given two statements followed by two conclusions numbered I and II. You have to take the given two statements to be true even if they seem to be at variance from commonly known facts. Read the conclusion and then decide which of the given conclusions logically follows from the two given statements, disregarding commonly known facts.

Choose answer

- (A) if only conclusion I follows;
- (B) if only conclusion II follows;
- (C) if either I or II follows;
- (D) if neither I nor II follows;
- (E) if both I and II follow.

1. Statements: Most clocks are fans
Some fans are walls
Conclusions: I. Some walls are fans
II. Some clocks are walls

Answer: A

2. Statements: All birds are dogs
Some dogs are cats
Conclusions: I. Some cats are not dogs
II. All dogs are not birds

Answer: D

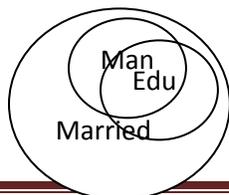
Solution: Conclusion I doesn't follow as all cats may be dog
Conclusion II doesn't follow as all dogs may be cats.

3. Statements: Some fools are intelligent
Some intelligent are great
Conclusions: I. Some fools are great
II. All great are intelligent.

Answer: D

4. Statements: All Men are married
Some men are educated
Conclusions: I. Some married are educated
II. Some educated are married.

Answer: E



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Directions for Questions 5-6: In each questions below are given two statements followed by two conclusions numbered I and II. You have to take the given two statements to be true even if they seem to be at variance from commonly known facts. read the conclusion and then decide which of the given conclusions logically follows from the two given statements, disregarding commonly known facts.

5. Statements: All bags are chalks.
All chalks are bottles.
Conclusions: I. Some bottles are bags.
II. All bags are bottles
III. All bottles are bags
IV. Some chalks are not bags

- A) Only I , II and IV follow
- B) Only I , III and IV follow.
- C) Only II, III and IV follow.
- D) All Follow
- E) one of these

Answer: A

6. Statements: Some trees are buses
All buses are hats
Conclusions: I Some trees are hats
II. Some hats are trees
III. All hats are buses
IV. Some buses are hats

- A) None follow s
- B) Only I, II and IV follow.
- C) Only II , III and IV follow.
- D) All Follow
- E) None of these

Answer: B

Directions(7-15): In each of the following questions one word is different from the rest. Find out the word which does not belong to the group

7. A) Yokel B) Upshot C) Lout D) Bumpkin

Answer: B

8. A) Sofa B) Bed C) Diwan D) Chair E) Table

Answer: B

9. A) Keraunophobia B) Tonitrophobia C) Phonophobia D) Astraphobia

Answer: C

10. A) HB B) ZU C) NI D) TO E) PK

Answer: (A)

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11. A) Printer B) Author C) Publisher D) Correspondent E) Reader

Answer: (E)

12. A) EQL B) BHF C) KTI D) SXD E) JWM

Answer: (D)

13. A) Curd B) Butter C) Oil D) cream

Ans: C

14. A) Poland B) Greece C) Spain D) Korea

Ans: D

15. A) Copper B) Tin C) Brass D) Zinc

Ans: C

16. Mr. A, Miss B, Mr. C and Miss D are sitting around a table and discussing their trades.

1. Mr. A sits opposite to cook
2. Miss B sits right to the barber.
3. The washer man is on the left of the tailor
4. Miss D sits opposite Mr. C

What are the trades of A and B?

- | | |
|----------------------|------------------------|
| A. Tailor and Barber | B. Tailor and cook |
| C. Barber and cook | D. washer man and cook |

Answer: B

17. In a pile of 10 books, there are 3 of History, 3 of Hindi, 2 of mathematics and 2 of English. Taking from above, there is an English book between a history and mathematics book, a history book between a mathematics and an English book, a Hindi book between an English and a mathematics book, a mathematics book between two Hindi books and two Hindi books between a Mathematics and a History book. Book of which subject is at the sixth position from top?

- A. English B. Hindi B. Mathematics C. History

Answer: B

Solution: Order of books:

History
English
Math
History
English
Hindi
Math
Hindi
Hindi
History

Hindi is at the sixth from top.

18. On a man's tombstone, it is said that one sixth of his life was spent in childhood and one twelfth as a teenager. One seventh of his life passed between the time he became an adult

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and the time he married; five years later, his son was born. Alas, the son died four years before he did. He lived to be twice as old as his son did.

How old did the man live to be?

Answer: 84 years

Solution: Answer can be deduced by the statement "one twelfth as a teenager" Only. As a man can spend 7 years being a teenager. Hence man lived = $12 \times 7 = 84$

19. What two numbers have a product of 48 and, when the larger number is divided by the smaller, a quotient of 3?

Answer: 4 and 12

Solution: $xy = 48$

$y = 3x$

So, $x = 4$ and $y = 12$

20. A drove of sheep and chickens have a total of 99 heads and feet. There are twice as many chickens as sheep. How many of each are there?

Answer: nine sheep and eighteen chickens.

Solution: Let number of sheep and chickens be x and $2x$ respectively.

(Number of heads) + (Number of legs) = 99

or, $(x + 2x) + (4x + 4x) = 99$

or, $11x = 99$

or, $x = 9$