NUMBERS

1. Find the unit place: 1+22+33+44+55+66.

a. 6

b. 7

c. 8

d. 9

4^1 = 4 = 4

4^2 = 16 = 6

4^3 = 64 = 4

1 + 4 + 7 + 6 + 5 + 6 = 29 = 9

ANSWER: 9

Which number should be subtracted from 876905 so that it can be divisible by 8?

a. 1

b. 2

c. 3

d. 4

DIVISIBILITY RULE FOR 8

8 = 23 🡺 LAST 3 DIGITS

905 % 8 = 1

905 – 1 = 904 % 8 = 0 🡺 876905 – 1 % 8 = 0

**ANSWER: 1**

If a number is divisible by 63, then it is also divisible by:

a. 7

b. 11

c. 13

d. 17

63 🡺 LCM(7,9) 🡪 COMPOSITE PRODUCT

7 \* 9 = 63

IF A NUMBER IS DIVISIBLE BY 7 & 9 THEN YOU CAN SAY IT IS ALSO DIVISIBLE BY 63.

ANSWER: 7

-3.4 is a number on the real number line. If we subtract 1 from this number then the new number will be

a. Farther from the origin than -3.4

b. Closer to the origin than -3.4

c. Equality farther from the origin as -3.4 is

d. None of the above

-3.4 – 1 = -4.4

-4.4 -3.4 -2.4 -1.4 0

54 + 636 + 45 + 32 + 53 = ? . Find unit digit

a. 0

b. 1

c. 2

d. 3

4 + 6 + 5 + 2 + 3 = 20 = 0 🡪 UNIT DIGIT

ANSWER: 0

The number 456\*85 is completely divisible by 3. Smallest whole digit number in place of \* can be?

a. 0

b. 1

c. 2

d. 3

DIVISIBILITY RULE OF 3

4 + 5 + 6 + X + 8 + 5 = (28 + X)%3 🡺 X = 2

28 + 2 = 30 % 3 = 0

ANSWER: 2

Which number is multiplied by 43, which have 3 prime factor?

a. 2

b. 4

c. 6

d. 8

43 \* 2 🡺 2 PRIME FACTOR

43 \* 4 = 43 \* 2 \* 2 🡺 2 PRIME FACTOR

43 \* 6 = 43 \* 2 \* 3 🡺 3 PRIME FACTOR

43 \* 8 = 43 \* 2 \* 2 \* 2 🡺 2 PRIME FACTORS

ANSWER: 6

What is the smallest number that should be divided by 10500 to make it a perfect cube?

a. 4

b. 84

c. 12

d. 21

10500 / 4 = 2625

10500 / 84 = 125 = 5 \* 5 \* 5

10500 / 12 = 875

10500 / 21 = 500

ANSWER: 84

If an integer K‘ is divisible by 2, 5 and 13.What is the next largest number that is divisible by all the 3 given numbers?

a. 2K

b. K + 13

c. 2K + 13

d. 2K + 65

e. K + 130

LCM 🡺 2,5,13 = 2 \* 5 \* 13 = 130

LCM = 130 = K

130, 130 + 130, 130 + 130 + 130,…..

130, 260, 390,…..

K,K+130,K+260,…..

ANSWER: E

For the smallest number that should be multiplied with 54000 to make it a perfect cube?

a. 4

b. 27

c. 5

d. 3

54000 \* 4 = 216,000 = 603

54000 \* 27 = 1458,000

54000 \* 5 = 270,000

54000 \* 3 = 162,000

What is the smallest square number, which is divisible by 2,4,5,6 and 9 ?

a. 200

b. 90

c. 180

d. 900

900 = 302

9 + 0 + 0 = 9 % 9 = 0

900 % 2 = 0

9 + 0 + 0 = 9 % 3 = 0

900 % 6 = 0

900 % 4 = 0

What is the least number which should be added to 1330 to make it a perfect square?

a. 56

b. 1

c. 40

d. 30

e. 39

1330 + 56 = 1386

1330 + 1 = 1331

1330 + 40 = 1370

1330 + 30 = 1360

1330 + 39 = 1369 = 37 \* 37

Answer: 39

The number 673 and 865 is divisible by which of the following leaving a remainder 1?

a. 1

b. 2

c. 3

d. 4

e. 2,3,4

673 – 1 = 672; 865 – 1 = 864

HCF OF 672,865

672 = 2\*2\*2\*2\*2\*3\*7 = 25 \* 3 \* 7

864 = 2\*2\*2\*2\*2\*3\*3\*3 = 25 \* 33

HCF = 25 \* 3 = 96

HCF = 96

ANSWER: E

Find the missing number in 25, 38, \_, 64, -27, 90

a. -1

b. 51

c. 39

d. -32

25 + 38 = 63

-27 + 90 = 63

-1 + 64 = 63

ANSWER: -1

4522 is not divisible by

a. 7

b. 17

c. 19

d. 21

NUMBER \* X = Y +1 (OR) -1 = Z % 10

7 \* 3 = 21 - 1 = 20 % 10 = 0

4522 🡺 NO. OF ZEROS 🡪 NO. OF DIGITS

452 2 \* 2 = 4

452 – 4 = 448 % 7

44 8 \* 2 = 16

44 – 16 = 28 % 7 = 0

4522 🡪 Divisible by 7

4522

NUMBER \* X = Y +1 (OR) -1 = Z % 10

17 \* 3 = 51 – 1 = 50 % 10 = 0

452 2 \* 5 = 10

452 – 10 = 442 % 17

44 2 \* 5 = 10

44 – 10 = 34 % 17 = 0

4522 % 17 = 0

NUMBER \* X = Y +1 (OR) -1 = Z % 10

19 \* 1 = 19 + 1 = 20 % 10 = 0

452 2 \* 2 = 4

452 + 4 = 456 % 19

45 6 \* 2 = 12

45 + 12 = 57 % 19 = 0

4522 % 19 = 0

NUMBER \* X = Y +1 (OR) -1 = Z % 10

21 \* 1 = 21 – 1 = 20 % 10

452 2 \* 2 = 4

452 – 4 = 448 % 21

44 8 \* 2 = 16

44 – 16 = 28 % 21 != 0

21 🡪 7 & 3

4522 % 7 = 0

4522 = 4 + 5 + 2 + 2 = 13 % 3 != 0

ANSWER: 21

TAKE A SMALL BREAK OF 15 MINS

Time and Work

50 hens lay 200 eggs in 2 days and 20 hens lay 400 eggs in how many days?

a. 5

b. 15

c. 10

d. 20

50 hens 🡺 200 eggs 🡺 2 days

20 hens 🡺 400 eggs 🡺 ? days

50 hens 🡺 1 day 🡺 100 eggs

1 hen 🡺 1 day 🡺 2 eggs

20 hens 🡺 40 eggs 🡺 1 day

20 hens 🡺 400 eggs 🡺 10 days

Answer: 10 days

4 men can do a work in 7 days. How many men required to do it in 4 days?

a. 7

b. 8

c. 9

d. 10

e. 4

m 🡪 Number of men; d 🡪 Number of days; W 🡪 Work done

m1 \* d1 / w1 = m2 \* d2 / w2

w1 = w2

4 \* 7 = X \* 4

X = 7 men

Answer: 7

(or)

4 men = 7 days

1 men = 7 \* 4 days

Men = 28 / 4 = 7 Men

7 men = 4 days

Answer: 7

Jagdish can build a wall in 10 days. Narender can build the same wall in 12 days while Sumit takes 15 days to do the same job. Which two of them should be employed to finish the job in 6 days?

a. Jagdish and Narender

b. Jagdish and Sumit

c. Sumit and Narender

d. None of the above

Jaga = 10 days

Narender = 12days

Sumit = 15 days

1 day work for Jaga (J) = 1/10

1 day work for Narender (N) = 1/12

1 day work for Sumit (S) = 1/15

J + N = 1/10 + 1/12 = 12 + 10 / 120 = 22 / 120 = 11/60

J + N = 60/11 = 5 5/11 days

J + S = 1/10 + 1/15 = 15 + 10 / 150 = 25/150 = 1/6

J + S = 6 days

Answer: Jagdish and Sumit

Mary and John can do a piece of work in 24 days; John and Vino in 30 days; Vino and Mary in 40 days. If Mary, John and Vino work together they will complete the work in :

a. 10 days

b. 20 days

c. 17 days

d. 15 days

J 🡪 John; M 🡪 Mary; V 🡪 Vino

J + M = 24 days

J + V = 30 days

V + M = 40 days

J + M + V = ?

1 day work for J & M = 1/24

1 day work for J & V = 1/30

1 day work for V & M = 1/40

J + M + J + V + V + M = 1/24 + 1/30 + 1/40

2(J + V + M) = 1/10

J + V + M = 1/20

J + V + M = 20 days

Answer: 20 days

A can do a piece of work in 100 days, B and C together can do the same work in 20 days. If B can do the work in same time as that of C and A together then how long C alone can do the same work?

a. 100 days

b. 50 days

c. 25 days

d. 20 days

1 day work for 1/A = 1/100

1 day work for 1/B + 1/C = 1/20

B = C + A

1 day work for 1/B = 1/A + 1/C

1/B = 1/100 + 1/C 🡪 I

1/B = 1/20 – 1/C 🡪 II

1/100 + 1/C = 1/20 – 1/C

2/C = 1/20 – 1/100 = 1/25

2/C = 1/ 25

C = 50 days

Answer: 50 days

A man can complete a job in 12 days and his wife can complete the same job in 15 days. How long will they take to complete the job if they work together?

a. 6 2/3

b. 6 1/2

c. 10 1/2

d. 10 2/3

Total work = 1

1 day work for Man = 1/12

1 day work for Wife = 1/15

Working Together = 1/12 + 1/15 = 3/20

Completed = 20/3 days

Working together = 6 2/3 days

Answer: 6 2/3 days

Naresh completes a work in 10 days and Suresh does it in 12 days and John does it in 15 days. If the same job has been completed in 6 days who are the workers who completed the job in 6 days?

a. Naresh, John

b. John, Suresh

c. Naresh, Suresh

A does 80% of a work in 20 days. He then calls in B and they together finish the remaining work in 3 days. How long B alone would take to do the whole work?

a. 23

b. 27

c. 37 ½

d. 40

Part of work completed in 20 days by A = 80/100 = 4/5

A alone complete = 20 \* 5/4 = 25 days

1 day A alone = 1/25

A and B takes 3 days to complete remaining

Remaining Work = 1 – 4/5 = 1/5

3 + 3 + 3 + 3 + 3 = 15

A & B work complete = 3 \* 5 = 15 days

1 day A&B = 1/15

(1/A + 1/B) = 1/25 + 1/B

1/15 = 1/25 + 1/B

1/B = 1/15 -1/25 = 4/150 = 1/37 ½

B alone complete = 37 ½ days

Answer: 37 ½ days

Ronald and Elan are working on an assignment. Ronald takes 6 hours to type 32 pages on a computer, while Elan takes 5 hours to type 40 pages. How much time will they take, working together on two different computers to type an assignment of 110 pages?

a. 7hr 30min

b. 7hr

c. 8hr 15min

d. 8hr

R 🡪 6 hours 🡺 32 pages

E 🡪 5 hours 🡺 40 pages

R 🡪 1 hour 🡺 32/6 = 16/3 pages

E 🡪 1 hour 🡺 40/5 = 8 pages

R + E = 16/3 + 8 =13 1/3 pages = 40/3 pages

For 110 pages = 110 / (40/3) = 110 \* (3/40) = 33/4

= 8 ¼ hours = 8 hours 15 mins

Answer: 8 hours 15 mins

A group of women can do finish a piece of work in 50 days. In how many days will one-third the number of women be able to finish two-third of the work?

a. 150

b. 75

c. 60

d. 100

Number of days = ?

W can complete = 50 days

1/3 W = 50 \* 3 = 150 days

Total work = 150 days

150 = 50 + 100

2/3 work = 150 \* 2/3 = 100 days

Answer: 100 days

(Or)

1 day work for (1/3) W = 1/150

= 1/150 \* 3/2 = 1/50\*2 = 1/100

Work Complete = 100 days

Two content Managers can complete developing questions for a module in 18 days. 7days after they start working. 10 interns join them. How many days will they take to complete the remaining work if they are all equally efficient?

a. 15/6

b. 11/144

c. 2

d. 21/6

A & B 🡺 18 days

A 🡺 18 \* 2 = 36 days

B 🡺 18 \* 2 = 36 days

1 day work for A = 1/36

1 day A & B = 1/36 + 1/36 = 1/18

For 7 days = 1/18 \* 7 = 7/18

Completed work = 7/18

Remaining work = 1 – 7/18 = 11/18

10 + 2 🡺 12 people

1 day A alone = 1/36 units

For 1 day 12 people = 12/36 units = 1/3 units

Remaining work = 11/18 \* 3 = 11/6 days = 1 5/6 days