Best practice:

A Best practice is standard or set of guidelines that is known to produce Good outcomes if followed. Best practices are related to how to carry out a task or Configure something. Best education practice activities are behaviors or policies by faculty, staff and administrators that results in positive changes in student attitudes or academic behaviors.

Uses of Best practice:

Best practice reflect the credibility and cheerful life of a College. These practices are able to install the scientific approach to issues or problems of Society. Best practices are the agents of change for a particular educational institution and Society as well.

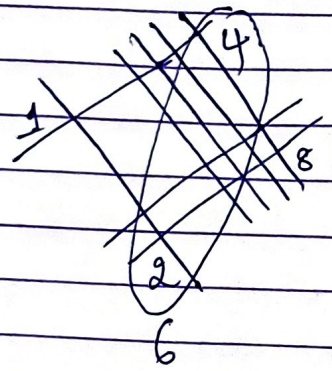
Best practices in Mathematics:

Establish mathematics goals to focus reasoning impliment tasks that promote reasoning and problem solving. Use and Connect mathematical representations. Facilitate meaningful mathematical discourse. pose purposeful questions. Math Best practice keep our students excited about Math. Conceptual understanding, Using Concepts in Math Vocabulary, Cooperative learning strategies, Meaningful and frequent homework, puzzle pieces math instruction, verbalize math problems,

1) $(104)^2 = 10816$
(100) (4)

2) $(107)^2 = ?$ (Ans: 11449)

3) $12 \times 14 = 168$



(or)

$12 \times 14 = 168$

$1 \times 1 = 1$

$2 + 4 = 6$

$2 \times 4 = 8$

4) $13 \times 12 = ?$ (Ans: 156)

5) $4232 \div 5$ (double of number)

$= 846.4$

Reflection time, Making Math facts fun.

Uses of math tricks:

Math tricks are the ways to solve Complex mathematical problems easily and quickly. Mathematics is not only limited to learning from textbooks, there are different learning styles that makes mathematics easier. Simple Maths magic tricks helps us with fast calculations and improve our mathematical skills.

It can help them to reduce the number of steps that they need to take to tackle a problem and arrive at the right solution. They can also offer students a range of ways to approach and solve the same problem. Getting a grasp of math tricks can ultimately make math intresting.

6) What is the units digits of 4^{854} ?

$4^1 = 4$ ✓, in power is even units place 6
$4^2 = 16$ ✓
$4^3 = 64$ ✓ 854 even number so
$4^4 = 256$ ✓ Units place of 4^{854} is 6.

7) $\frac{2}{3} \times \frac{4}{5} = \frac{8}{15}$ (multiplication)

$\frac{3}{4} \div \frac{7}{5} = \frac{15}{28}$ (Division)

$\frac{2}{5} + \frac{4}{7} = \frac{14+20}{35} = \frac{34}{35}$ (Addition)

$\frac{3}{4} - \frac{1}{5} = \frac{15-4}{20} = \frac{11}{20}$ (subtraction)

$\frac{5}{6} + \frac{1}{5} = ?$ (Ans: $\frac{31}{30}$)

$\frac{3}{4} - \frac{1}{5} = ?$ $\left(\frac{11}{20}\right)$

$\frac{7}{2} \times \frac{1}{5} = ?$ $\left(\frac{7}{10}\right)$

$\frac{5}{3} \div \frac{3}{2} = ?$ $\left(\frac{10}{9}\right)$

8) 30% of 50 = 15

9) 50% of 70 = 35

10) 70% of 90 = 63

11) 20% of 80 = 16

12) 40% of 60 = 24

13) 10% of 75 = 1 × 7.5 = 7.5

14) 20% of 42 = 2 × 4.2 = 8.4

15) 40% of 51 = 4 × 5.1 = 20.4

16) 50% of 15 = 5 × 1.5 = 7.5

17) 80% of 25 = 8 × 2.5 = 20

18) 23% of 50 = ?

(Ans: 50% of 23 = 11.5)

half of 23

19) If $1^2+2^2+3^2+4^2+\cdots+14^2 = 1015$ then

$3^2+6^2+9^2+\cdots+42^2$?

$\downarrow$

$(1\times3)^2+(2\times3)^2+(3\times3)^2+(4\times3)^2+\cdots(14\times3)^2$

$3^2[1^2+2^2+\cdots+14^2]$

$= 3^2 \times 1015 = 9 \times 1015 = 9135$

20) 121
× 301
3 6 4 2 1

$1\times1=1$

$(1\times2)+(2\times0)=2$

$(1\times1)+(1\times3)+(2\times0)=4$

$(0\times1)+(3\times2)+(1\times1)=6$

$1\times3=3$

21) Smallest number among

$2^{50}, 3^{40}, 4^{30}, 5^{20}$?

Hcf of 50, 40, 30, 20 = 10

$2^5, 3^4, 4^3, 5^2$

$\downarrow$ 32, $\downarrow$ 81, $\downarrow$ 64, $\downarrow$ 25

(5^{20} is smallest

22) $+\left[\begin{matrix}7 & 1\\ \times & \times\\ 2 & 1\end{matrix}\right.$

1491

(Ans: 16

23) 64 × 24

1281

(Ans 170

24) 81 × 21 = ?

27
12
Ans 282

25) 91 × 31 = ?

Ans = 1271

26) 41 × 31 = ?

27) Date of Birth

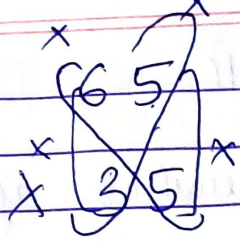
① month × 5
② +6
③ × 4
④ +9
⑤ × 5
⑥ + Date

(Secret −165) :)

× 42

Month Date.

28) 30 + 15 = 45

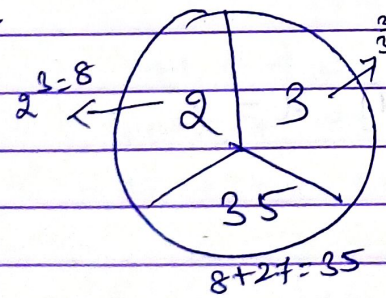


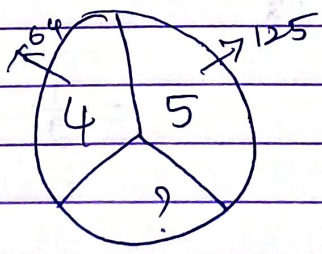
① 1825
45
2265

29) 55 × 25 = ? (Ans 1375)

30) What is next number of sequence
32, 37, 47, 58, 71, ?
(3+4) (3+7) (4+7) (5+6) (7+1) (7+1+8=80)
5 10 11 13 9
80
79

31)





64 + 125
= 189

32) ① Choose a number between 1 to 10
② multiply by 16
③ Add 144

then divide the answer by 16

Now the subtract the number you choosed at starting with your answer

your answer is (9) (i)

33) If $x = \sqrt{3} + \sqrt{2}$ then what is the value of $\left(x + \frac{1}{x}\right)$

$x = \sqrt{3} + \sqrt{2}$ then $x + \frac{1}{x} = 2\sqrt{3}$

if 3 - 2 = (1) $x - \frac{1}{x} = 2\sqrt{2}$.

34) $\sqrt{x}\sqrt{x}\sqrt{x}\sqrt{x}\ldots\infty = \frac{1}{2}$ then $x = ?$

$\left[\sqrt{x}\right]^{1/2} = \frac{1}{2}$

$\left[x^{1/2}\right]^{1/2} = x^{1/4} = \frac{1}{2} \Rightarrow x = \left(\frac{1}{2}\right)$

$= \frac{1}{16}$

35) If $\sqrt{p}^{\sqrt{p}^{\sqrt{p}^{\cdots\cdots\infty}}} = \frac{1}{5}$ then find P=?

(Ans 5^{-10})

1) A number series is given with one term missing. Choose the correct alternative that will continue the same pattern and replace the question mark in the given series.

1, 9, 25, 49 ? 121

Ans — Squaring odd numbers then we get the missing number.

$1^2, 3^2, 5^2, 7^2, 9^2, 11^2$

so '81' is the answer.

2) 1, 2, 6, 7, 21, 22, 66, 67? what is the missing term

Sol — The pattern is '+' addition and another one is +1, and one ×3. then '×' Multiplication

+1, ×3, +1, ×3, +1, ×3 ....

1, 2×3=6, 6+1=7, 7×3=21, 21+1=22, 22×3=66,

66+1=67 67×3=201

so here Missing term is

67×3=201

3) In the series 2, 6, 18, 54. ... what will be the 8th term?

Sol) clearly $2\times3=6$, $6\times3=18$
$18\times3=54$ ....
so, the series is a G.P in which
$a=2$, and $r=3$.

$\therefore$ 8th term $= ar^{(8-1)}$
$= ar^7$
$= 2\times3^7$
$= 2\times2187$
$= 4374$.
so the 8th term is 4374.

4) finding the wrong term in the given series.

⇒ find the wrong number in the series.

7, 28, 63, 124, 215, 342, 511

Sol) clearly, the correct sequence is

$2^3-1 = 8-1 = 7$, $3^3-1 = 27-1 = 26$, $4^3-1 = 64-1 = 63$ ...
5^3-1, 6^3-1, 7^3-1, 8^3-1
so 28 is wrong and should be replaced by $(3^3-1) = 26$.

5) Find the wrong number in the series.

3, 8, 15, 24, 34, 48, 63.

Sol:

The difference between consecutive terms of the given series are respectively

5, 7, 9, 11, 13 and 15 so

clearly, '34' is a wrong number and must be replaced by (24+11) i.e '35'.

6) 3, 7, 15, 39, 63, 127, 255, 511 which is the wrong term.

Ans

The correct pattern is clearly "(x2+1)".

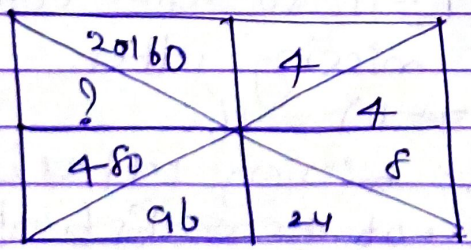
3x2+1=7, 7x2+1=15, 15x2+1=31'

i.e..... 255x2+1=511.

So that '39' is wrong and must be replaced by (15x2+1) i.e '31'.

'31' is the correct.

7) Find the missing character from among the given alternatives.



Ans

clearly, moving clockwise, we observe the following pattern:

$4 \times 1 = 4$; $4 \times 2 = 8$; $8 \times 3 = 24$; $24 \times 4 = 96$

$96 \times 5 = 480$

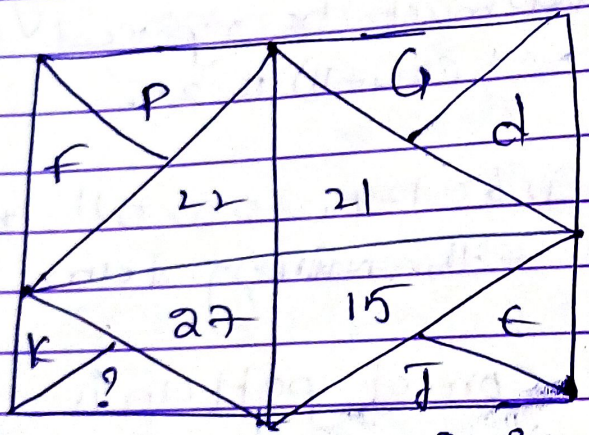
So required number $= (480 \times 6) = 2880$

$2880 \times 7 = 20160$.

So the missing character is 2880.

9)

8)



find the missing character from among the given alternatives.

Sol

putting $A = 1, B = 2, C = 3, D = 4 \ldots$

$X = 24, Y = 25, Z = 26$.

we have

$f + p = 6 + 16 = 22$;

$G + d = 7 + 14 = 21$;

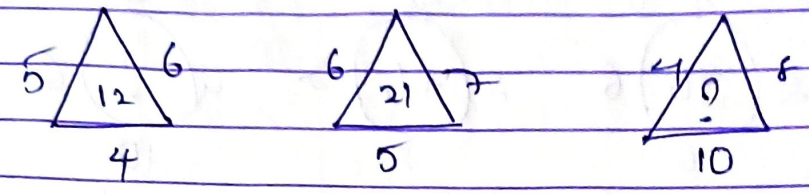
$J + e = 10 + 15 = 15$

Since $r = 11$, so value corresponding to missing letter.

$(27 - 11) = 16$.

So, the missing letter is the 16th letter of the english alphabet, which is P.

9)



Sol

Clearly, we have: $\frac{5\times6\times4}{10}$

$= \frac{120}{10}$

$= 12$

$\frac{6\times7\times5}{10} = \frac{210}{10}$

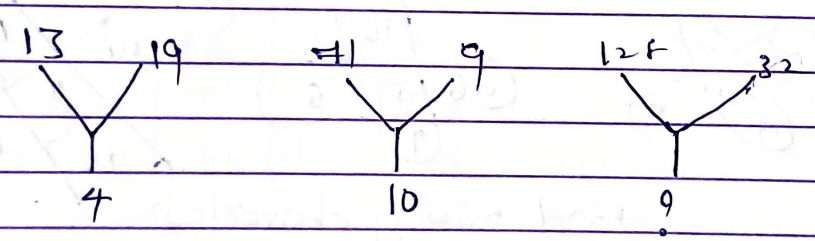
$= 21$

$\frac{4\times8\times10}{10} = \frac{320}{10}$

$= 32$

missing number is 32.

10]



Sol

clearly, we have $\frac{13+19}{8} = \frac{32}{8}$

$= 4.$

$\frac{71+9}{8} = \frac{80}{8}$

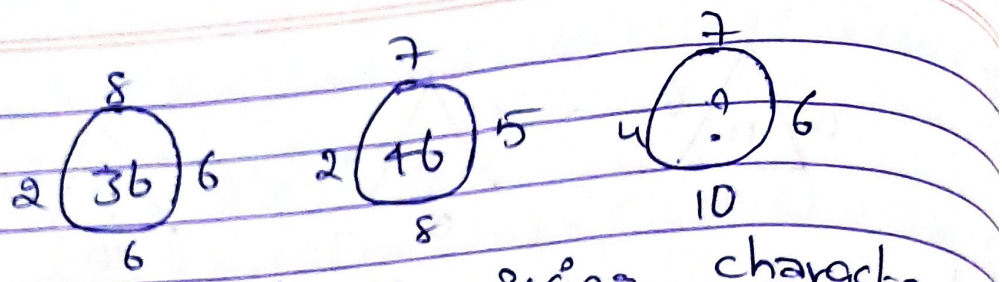
$= 10$

$\frac{128+32}{8} = \frac{160}{8}$

$= 20$

missing number is 20.

11)



which is the missing character from among given alternative

Sol We have: $(8\times6)-(2\times6)=$

$56-12$

$=36$.

$(7\times8)-(2\times5)$

$=56-10$

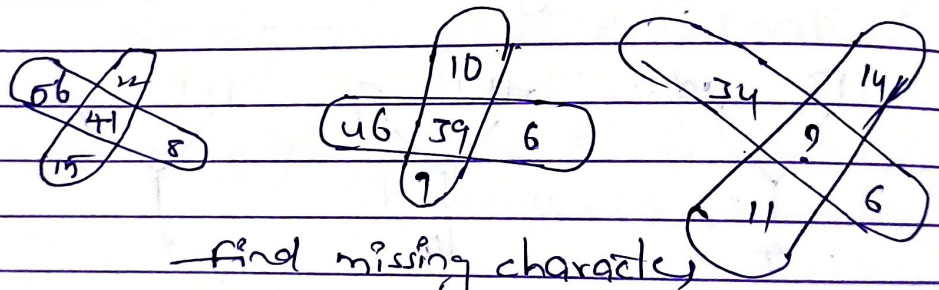
$=46$

missing number is $(7\times10)-(4\times6)$

$=70-24$

$=46$ ✓

12)



find missing character from among given alternative

Sol We have $(56+15)-(32+8)$

$=71-30$ $=71-30$.

$=41$.

$(46+9)-(10+6)$

$=55-16$

$=39$

missing number is $(34+11)-(14+8)$

$=45-20$

$=25$ //.

13]

1	2	3
4	5	6
7	8	9
27	38	?

find missing character from among the given alternative

Sol —

In the first column $(4\times7)-1=27$

In the second column $(5\times8)-2$

$=40-2$

$=38$

missing number $=(6\times9)-3$

$=54-3$

$=51$

Hence the missing number is 51.

14]

18	24	32
12	14	16
3	2	4
72	112	128

Ans —

In the first column, $12\times(18\div3)$

$12\times(6)$

$=72$

In the second column $16\times(32\div4)$

$=16\times8$

$=128$

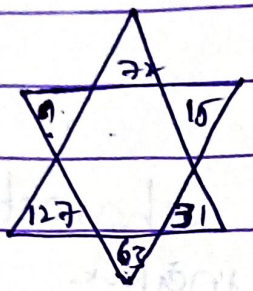
let the missing number be x. then in the second column we have

$14\times(24\div x) \Rightarrow 24\div x=8 \quad x=3$

$14\times(24\div3) \Rightarrow 14\times8$

$=112$ ∴ missing no is $= 112$

15) find the missing character in each of the following



Sol

we have

$7 \times 2 + 1 = 14 + 1$

$= 15$

$15 \times 2 + 1 = 30 + 1$

$= 31$

$31 \times 2 + 1 = 62 + 1$

$= 63$

$63 \times 2 + 1 = 126 + 1$

$= 127$

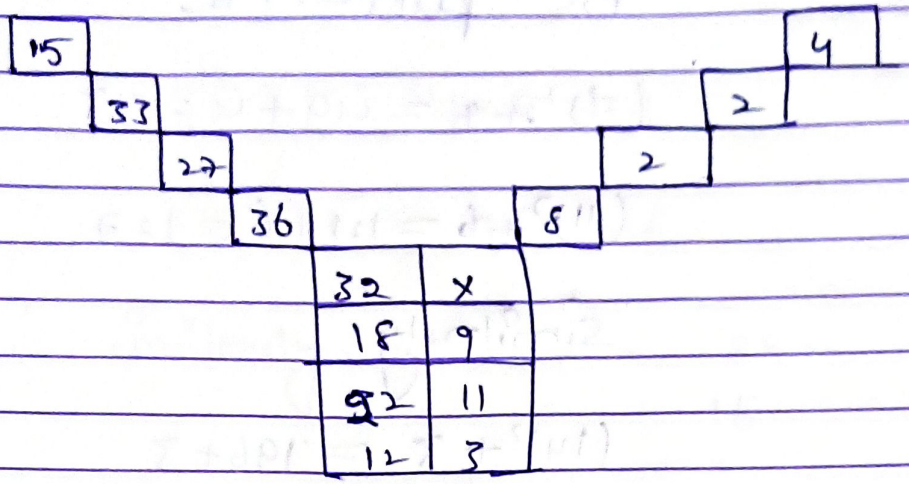
$127 \times 2 + 1 = 254 + 1$

$= 255$

So the missing number is 255.

16) study each of the following tables and choose the alternative which can best replace the sign of interrogation (?)

find the value of x in the following figure.



Ans :- The top left hand number is obtained by adding the bottom two numbers the top right hand number is the result of dividing the bottom two numbers.

thus $12+3=15$;

$12 \div 3 = 14$

$22+11=33$.

$2 \div 11 = 2$;

$18+9=27$.

$18 \div 9 = 2$ (or) $x=4$.

So. $32+x=36$ and $32 \div x = 8$

so Missing number is '4'.

17) :- Study the given pattern carefully and select the number that can replace the question mark (?) in it.

7	11	14
55	127	?
4	6	5

Ans The pattern is;

$(7)^2+4 = 49+4 = 53$

$(11)^2+6 = 121+6 = 127$

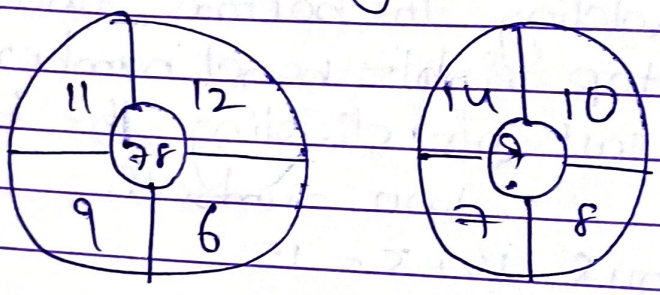
Similarly

$(14)^2+3 = 196+3$

$= 199.$

So missing number is '199'.

18)



Ans Hence $11\times12-6\times9$

$= 132-54$

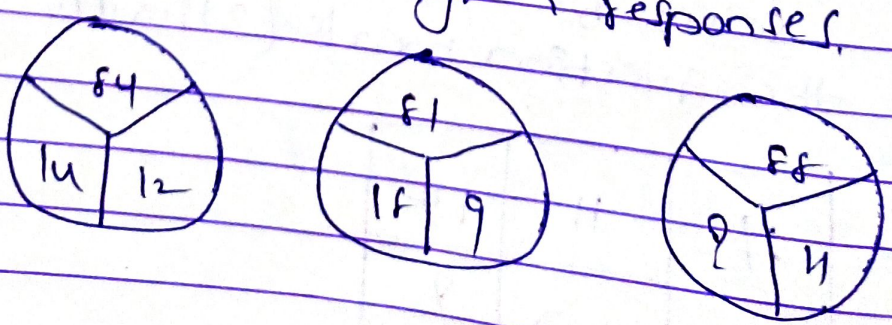
$= 78$

$14\times10-7\times8$

$140-56 = 84$

Here '84' is the missing number.

19) Select the missing number from the given responses.



Ans

$\frac{84}{12} \times 2 = 14 \times 2 = 14$

$\frac{81}{9} \times 2 = 9 \times 2 = 18$

Similarly, $\frac{88}{11} \times 2 = 8 \times 2$

$= 16$

20)

4	3	2
6	9	10
9	27	?

$4 \times \frac{3}{2}$

$\frac{12}{2}$

$= 6$

$6 \times \frac{3}{2} = \frac{18}{2} = 9$

$3 \times 3 = 9, \quad 9 \times 3 = 27$

$2 \times 5 = 10, \quad 10 \times 5 = 50.$

So 50 will come in place of the question mark.