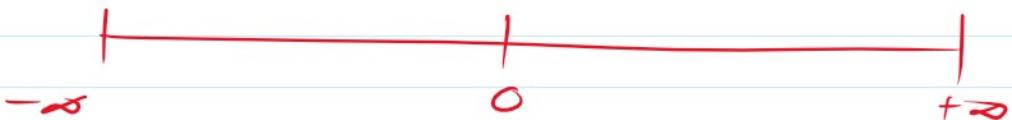


Series

1. Number -
2. Alphabet -

-ve  $\leftarrow$   $\rightarrow$  +ve

+ve Integer

1 Natural nos  $\rightarrow 1, 2, 3, 4, 5, \dots \dots \dots +\infty$

$\hookrightarrow$  Counting nos.

Whole nos  $\rightarrow 0, 1, 2, 3, 4, 5, 6, \dots \dots \dots +\infty$

**continuous  
set of  
Numbers**

Odd nos  $\rightarrow 1, 3, 5, 7, 9, 11, \dots \dots \dots +\infty$

Even nos  $\rightarrow 2, 4, 6, 8, 10, 12, \dots \dots \dots +\infty$

Multiple of  $n$   $\rightarrow n, 2n, 3n, 4n, 5n$

$\downarrow$   $\rightarrow 3, 6, 9, 12, 15, 18, 21, \dots \dots \dots +\infty$

A, B, C, D, E,  $\dots \dots \dots$   
 $\swarrow \quad \swarrow \quad \swarrow \quad \swarrow \quad \swarrow \quad \dots \dots \dots$   
 $x \quad x \quad x \quad x \quad x \quad \dots \dots \dots$

Prime nos  $\rightarrow 2, 3, 5, 7, 11, 13, 17, 19, \dots \dots \dots +\infty$

$\rightarrow$  Fibonacci Series

OR

$\rightarrow$  Hemachandra's number

$x, y, x+y, x+2y, 2x+3y, \dots 3x+5y$   
 $3 \quad 4 \quad 7 \quad 11 \quad 18 \quad 29$

1) 3, 4, 6, 9, 13, 18...24  
 $\swarrow \quad \swarrow \quad \swarrow \quad \swarrow \quad \swarrow \quad \swarrow$   
 $1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6$

2) 123, 146, 171, 198, 227...258  
 $\swarrow \quad \swarrow \quad \swarrow \quad \swarrow \quad \swarrow$   
 $23 \quad 25 \quad 27 \quad 29 \quad 31$

3) 54, 70, 88, 108, 130...154  
 $\swarrow \quad \swarrow \quad \swarrow \quad \swarrow \quad \swarrow$   
 $16 \quad 18 \quad 20 \quad 22 \quad 24$

4) 0, 6, 24, 60, 120, 210, 336  
 $\swarrow \quad \swarrow \quad \swarrow \quad \swarrow \quad \swarrow$

0, 6, 24, 60, 120, 210, 336  
 $\swarrow \quad \swarrow \quad \swarrow \quad \swarrow \quad \swarrow$   
 $6 \quad 18 \quad 36 \quad 60 \quad 90 \quad 126$   
 $1 \quad 10 \quad 24 \quad 2 \quad 24$

$$4) 0, 6, 24, 60, 120, 210, \dots 36$$

6    18    36    60    90  
 6    18    36    60    90

$$5) 6, 11, 21, 36, 56, \dots 81$$

5    10    15    20    25  
 5    10    15    20    25

$$6) 5, 9, 17, 29, 45, \dots 65$$

4    8    12    16    20  
 4    8    12    16    20  
 4    4    4    4    4

$$7) 5, 16, 49, 104, \dots 181$$

11    33    55    77  
 11    33    55    77

$$8) 5, 6, 9, 15, 25, 40, \dots 61$$

1    3    6    10    15  
 1    3    6    10    15

$$9) 20, 22, 26, 34, 50, 82, \dots 146$$

$$10) 3, 12, 27, 48, 75, 108, \dots 147$$

$$11) 12, 19, 35, 59, 90, \dots 127$$

7    16    24    31    37  
 7    16    24    31    37

$$12) 25, 29, 20, 36, 11, \dots 47$$

4    -9    16    -25    36  
 2    -3    4    -5    6

$$13) 5, 11, 24, 51, 106, \dots 217$$

$$14) 3, 8, 22, 63, 185, \dots 550$$

$$15) 13, 30, 66, 140, 290, \dots 592$$

$$16) 5, 14, 40, 117, 347, \dots 1036$$

$$17) 2, 9, 39, 161, 651, \dots 2613$$

$$18) 1, 6, 32, 163, 819, \dots 4100$$

65! 2

$$\begin{array}{ccccccc} & 18 & 26 & 34 & 70 & & \\ \swarrow & & \searrow & & \swarrow & & \searrow \\ 12 & & 18 & & 24 & & 30 \\ & 6 & 6 & 6 & 6 & & \end{array}$$

$$\begin{array}{ccccccccc} 5 & 6 & 9 & 15 & 25 & 40 & 61 \\ \swarrow & \searrow & \swarrow & \searrow & \swarrow & \searrow & \swarrow \\ 1 & 3 & 6 & 10 & 15 & 21 & \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \\ 2 & 3 & 4 & 5 & 6 & & \end{array}$$

$$\begin{array}{ccccccccc} 3 & 12 & 27 & 48 & 75 & 108 & 147 \\ \swarrow & \searrow & \swarrow & \searrow & \swarrow & \searrow & \swarrow \\ 9 & 15 & 21 & 27 & 33 & 39 & \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \\ 6 & 6 & 6 & 6 & 6 & & \end{array}$$

$$5 \times 2 + 1 = 11 \quad 11 \times 2 + 2 = 24$$

$$24 \times 2 + 3 = 51 \quad 51 \times 2 + 4 = 106$$

$$106 \times 2 + 5 = 217$$

$$3 \times 3 - 1 = 8 \times 3 - 2 = 24 \times 3 - 3 = 63$$

$$63 \times 3 - 4 = 185 \times 3 - 5 = 550.$$

$$13 \times 2 + 4 = 30$$

$$30 \times 2 + 6 = 66$$

$$66 \times 2 + 8 = 140$$

$$140 \times 2 + 10 = 290$$

$$290 \times 2 + 12 = 592$$

$$5 \times 3 - 1 = 14$$

$$14 \times 3 - 2 = 40$$

$$40 \times 3 - 3 = 117$$

$$117 \times 3 - 4 = 347$$

$$347 \times 3 - 5 = 1036.$$

$$2 \times 4 + 1 = 9$$

$$9 \times 4 + 3 = 39$$

$$39 \times 4 + 5 = 161$$

$$\begin{array}{r} 651 \\ \times 4 \\ \hline 2604 \end{array}$$



$$\begin{aligned} 9 \times 4 + 3 &= 39 \\ 39 \times 4 + 5 &= 161 \\ 161 \times 4 + 7 &= 651 \\ 651 \times 4 + 9 &= 2613 \end{aligned}$$

$$x^5 + 1 / + 2 / + 3$$

19) 2, 6, 21, 88, 445...  $\dots 2676$  logic  $x^2 + 2 / x^3 + 3 / \dots$

20) 7, 13, 41, 161, 809...  $\dots 4849$  logic  $\rightarrow x^2 - 1 / x^3 + 2 / x^4 - 3 / x^5 + 4$

21) 4, 10, 27, 112, 555  $\dots 3336$  logic  $\rightarrow x^2 + 2 / x^3 - 3 / x^4 + 4 / x^5 - 5$

22) 6, 14, 39, 160, 795  $\dots 4776$  logic

23) 5, 12, 33, 136, 675  $\dots 4056$  logic

25)  $18, 8, 6, 8, 24, 8, \dots 4 \cdot 8, 8, 28 \cdot 8$

26) 15, 8, 9, 20, 84  $\dots 680$

$$15 \times 5 + 5 = 80$$

$$8 \times 1 + 1 = 9$$

$$9 \times 2 + 2 = 20$$

$$20 \times 4 + 4 = 84$$

$$84 \times 8 + 8 = 680$$

27) 17, 9, 10, 16.5, 35  $\dots 90$

$$17 \times 0.5 + 5 = 9$$

$$9 \times 1 + 1 = 10$$

$$10 \times 1.5 + 1.5 = 16.5$$

$$16.5 \times 2 + 2 = 35$$

$$35 \times 2.5 + 2.5 = 90$$

28)  $5, 6, 7, 8, 10, 11, 14, \dots 15, \dots$

28)  $5, 6, 7, 8, 10, 11, 14, \dots$  ?

29)  $0, 2, 3, 5, 8, 10, 15, 17, 24, 26, \dots$  ?

30)  $3, 4, 7, 7, 13, 13, 21, 22, 31, 44, \dots$  ?

1.  $1, 5, 13, 25, 41, ?$

- |                   |        |
|-------------------|--------|
| (a) 51            | (b) 57 |
| <del>(c) 61</del> | (d) 63 |
| (e) None of these |        |

$$6 \times 2 + 1 = 13$$

$$13 \times 2 + 2 = 28$$

$$28 \times 2 + 3 = 59$$

$$59 \times 2 + 4 = \underline{122}$$

2.  $1, 1, 2, 6, 24, ?, 720$

- |                   |                    |
|-------------------|--------------------|
| (a) 100           | (b) 104            |
| (c) 108           | <del>(d) 120</del> |
| (e) None of these |                    |

3.  $6, 13, 28, 59, ?$

- |                   |                    |
|-------------------|--------------------|
| (a) 111           | <del>(b) 113</del> |
| (c) 114           | <del>(d) 122</del> |
| (e) None of these |                    |

4.  $3, 15, ?, 63, 99, 143$

- |                   |                   |
|-------------------|-------------------|
| (a) 27            | <del>(b) 35</del> |
| (c) 45            | (d) 56            |
| (e) None of these |                   |

$$2^2 - 1 = 3$$

$$4^2 - 1 = 15$$

$$6^2 - 1 = \underline{35}$$

$$8^2 - 1 = 63$$

$$10^2 - 1 = 99$$

$$12^2 - 1 = 143$$

$$n^2 - 1$$

$n = \text{a even no}$

5.  $5760, 960, ?, 48, 16, 8$

- |                    |         |
|--------------------|---------|
| (a) 120            | (b) 160 |
| <del>(c) 192</del> | (d) 240 |
| (e) None of these  |         |

$$8 \times 2 = 16$$

$$192 \times 5 = 960$$

$$16 \times 3 = 48$$

$$960 \times 6 = 5760$$

$$48 \times 4 = \underline{192}$$

6.  $81, 512, 2401, 7776, 15625, 16384, ?$

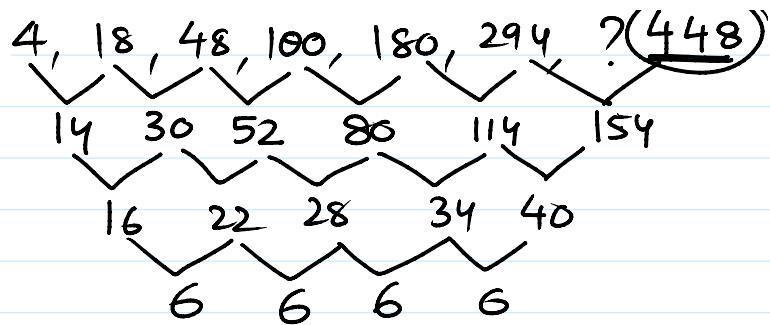
- |          |                      |
|----------|----------------------|
| (a) 2187 | <del>(b) 19683</del> |
|----------|----------------------|

$$\frac{9^2}{3} = 81$$

$$\frac{4^7}{8} = 16384$$



~~(c)~~ 448



14. 20, 24, 33, 49, 74, 110 ?

(a) ~~133~~

(b) 147

(c) ~~159~~

(d) 163

(e) 171

15. 529, 841, 961, 1369, 1681, 1849, ?

(a) 2809

(b) 2601

(c) ~~3249~~

(d) 3481

(e) ~~2209~~

16. 16, 24, 48, 120, 360, 1260, ?

(a) 3780

(b) 4725

(c) 5355

(d) ~~5040~~

(e) 4410

17. 8, 31, 122, 485, 1936, 7739, ?

(a) ~~30950~~

(b) 46430

(c) 34650

(d) 42850

(e) 38540

18. 499, 622, 868, 1237, 1729, 2344, ?

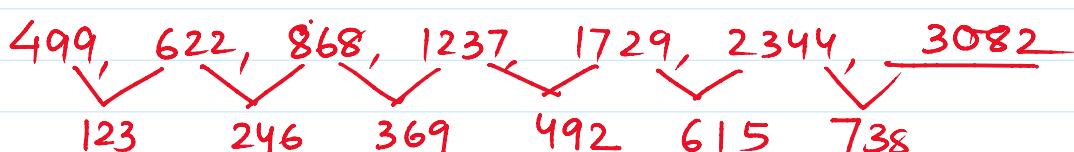
(a) 3205

(b) ~~3082~~

(c) 2959

(d) 3462

(e) 2876



19. 231, 342, 453, 564, ....?...

(a) 576

(b) 175

+111

$$20+2^2=24 \quad 49+5^2=74.$$

$$24+3^2=33 \quad 74+6^2=110.$$

$$33+4^2=49 \quad 110+7^2=\underline{159}$$

$$23^2, 29^2, 31^2, 37^2, 41^2, 43^2, \underline{47^2}$$

(Prime no.)<sup>2</sup>

$$16 \times 1.5 = 24$$

$$24 \times 2 = 48$$

$$48 \times 2.5 = 120.$$

$$120 \times 3 = 360$$

$$360 \times 3.5 = 1260$$

$$1260 \times 4 = 5040$$

$$8 \times 4 = 32 - 1 = 31.$$

$$31 \times 4 = 124 - 2 = 122$$

$$122 \times 4 = 488 - 3 = 485$$

$$485 \times 4 = 1940 - 4 = 1936$$

$$1936 \times 4 = 7744 - 5 = 7739$$

$$7739 \times 4 = 30956 - 6 = 30950.$$

十一

$$(-12)$$



$$\begin{aligned}13 + 14 &= 27 \\14 + 27 &= 41 \\27 + 41 &= 68 \\41 + 68 &= 109 \\68 + 109 &= 177\end{aligned}$$



$$\begin{array}{r}
 \underline{\frac{3}{3}} \quad \underline{\frac{5^3}{3}} \quad \underline{\frac{7^3}{3}} \quad \underline{\frac{9}{3}} \\
 \hline
 & & & 426 \\
 & & & 343 \\
 & & & \hline
 & & 769 \\
 & & 729 \\
 \hline
 & 1 & 998 \\
 & 1 & 331 \\
 \hline
 & & 2829
 \end{array}$$



$$\begin{aligned}4 \times 4 + 3 \times 4 &= 16 + 12 = 28 \\28 \times 5 + 4 \times 5 &= 140 + 20 = 160 \\160 \times 6 + 5 \times 6 &= 960 + 30 = 990 \\990 \times 7 + 6 \times 7 &= 6930 + 42 = 6972\end{aligned}$$

- 6.  $7.5, \cancel{47.5}, 87.5, 157.5, 247.5, 357.5, 487.5$

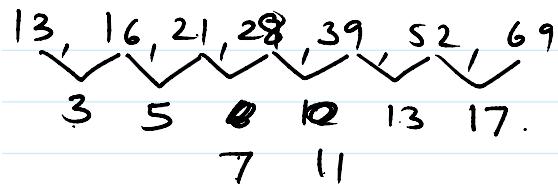
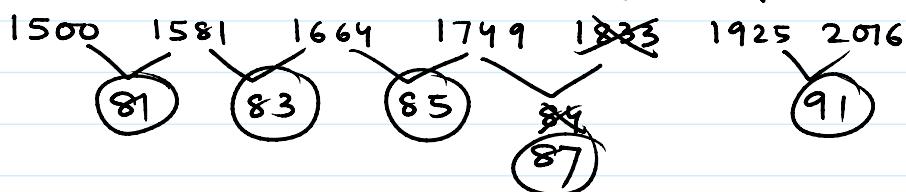
(a)  $357.5$       (b)  $87.5$   
(c)  $157.5$       (d)  $7.5$

13 14 21 28 29 52 49

6. 7.5, 47.5, 87.5, 137.5, 247.5, 337.5, 407.5  
 (a) ~~37.5~~  
 (b) 87.5  
 (c) 157.5  
 (d) 7.5  
 (e) ~~47.5~~

7. 13, 16, 21, ~~X~~, 39, 52, 69  
 (a) 21  
 (b) 39  
 (c) ~~27~~  
 (d) 52  
 (e) 16

8. 1500, 1581, 1664, 1749, 1833, 1925, 2016  
 (a) 1581  
 (b) 1664  
 (c) ~~1833~~  
 (d) 1925  
 (e) 1749



9. 66, 91, 120, 153, 190, ~~233~~, 276  
 (a) 120  
 (b) ~~233~~  
 (c) 153  
 (d) 276  
 (e) 190
10. 1331, 2197, 3375, ~~4914~~, 6859, 9261, 12167  
 (a) ~~4914~~  
 (b) 6859  
 (c) 9261  
 (d) 2197  
 (e) 12167

$$\begin{array}{r} 29 \\ \times 17 \\ \hline 4913 \end{array}$$

11. 3, 7, 16, 35, ~~7~~, 153, 312  
 (a) 7  
 (b) 153  
 (c) 35  
 (d) ~~72~~  
 (e) 16

12. 18, ~~23~~, 32, 48, 73, 109  
 (a) ~~20~~  
 (b) 23  
 (c) 32  
 (d) 48  
 (e) 73

13. 7, 4, 5, 9, 20, ~~51~~, 106.5  
 (a) 4  
 (b) 5  
 (c) ~~9~~  
 (d) 20  
 (e) ~~51~~

$$\begin{aligned} 3 \times 2 &= 6 + 1 = 7 \\ 7 \times 2 &= 14 + 2 = 16 \\ 16 \times 2 &= 32 + 3 = 35 \\ 35 \times 2 &= 70 + 4 = 74 \end{aligned}$$

$$\begin{aligned} 74 \times 2 &= 148 + 5 = 153 \\ 153 \times 2 &= 306 + 6 = 312 \end{aligned}$$

$$\begin{aligned} 18 + 1^2 &= 19 \\ 19 + 2^2 &= 23 \end{aligned}$$

$$7 \times \frac{1}{2} + \frac{1}{2} = 4$$

$$\begin{aligned} 23 + 3^2 &= 32 \\ 32 + 4^2 &= 48 \\ 48 + 5^2 &= 73 \\ 73 + 6^2 &= 109 \end{aligned}$$

$$\begin{aligned} 4 \times 1 + 1 &= 5 \\ 5 \times 1.5 + 1.5 &= 9 \\ 9 \times 2 + 2 &= 20 \\ 20 \times 2.5 + 2.5 &= 52.5 \end{aligned}$$

$$73 + 6 = 109$$

$$20 \times 2.5 + 2.5 = 52.5$$



$$\begin{aligned}6 \times 2 - 2 &= 10 \\10 \times 2 - 2 &= 18 \\18 \times 2 - 2 &= 34 \\34 \times 2 - 2 &= 66 \\66 \times 2 - 2 &= 130 \\130 \times 2 - 2 &= 258.\end{aligned}$$

$$\begin{aligned}2 - 1 &= 1 \times 7 = 7 \\7 - 2 &= 5 \times 6 = 30. \\30 - 3 &= 27 \times 5 = 135 \\135 - 4 &= 131 \times 4 = 524\end{aligned}$$



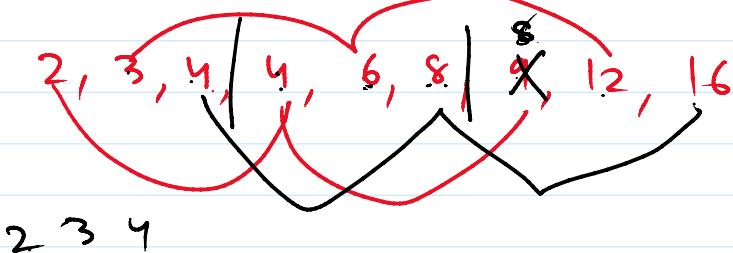
$$\begin{array}{lll} 1 \times 2 + 1 = 3 & 10 \times 2 + 1 = 21 & 64 \times 2 + 1 = 129 \\ 3 \times 3 + 1 = 10 & 21 \times 3 + 1 = 64 & 129 \times 3 + 1 = \end{array}$$

17. 3, 4, 10, ~~32~~, 136, 685, 4116  
(a) 10 (b) 32  
(c) 136 (d) 4116  
(e) all are correct

18. 2, 3, 4, 4, 6, 8, ~~12~~, 16  
(a) 3 (b) 6  
(c) 9 (d) 12  
(e) none of these



$$\begin{aligned}3 \times 1 + 1 &= 4 \\4 \times 2 + 2 &= 10 \\10 \times 3 + 3 &= 33 \\33 \times 4 + 4 &= 136\end{aligned}$$



1. 5 9 25 91 414 2282.5  
 3 (A) (B) (C) (D) (E)  
 What will come in the place of (C)?  
 (a) 63.25 (b) 63.75  
 (c) 64.25 (d) ~~64.75~~  
 (e) None of these

$$3 \times 1.5 + 1.5 = 6 \quad (\text{A})$$

$$6 \times 2.5 + 2.5 = 17.5 \text{ (B)}$$

$$17.5 \times 3.5 +$$

1. 5 9 25 91 414 2282.5  
 3 (A) (B) (C) (D) (E)  
 What will come in the place of (C)?  
 (a) 63.25 (b) 63.75  
 (c) 64.25 (d) ~~64.75~~  
 (e) None of these

$$3 \times 1.5 + 1.5 = 6 \text{ (A)}$$

$$6 \times 2.5 + 2.5 = 17.5 \text{ (B)}$$

$$17.5 \times 3.5 +$$

2. 15 9 8 12 36 170  
 19 (A) (B) (C) (D) (E)  
 What will come in the place of (B)?  
 (a) 18 (b) ~~16~~  
 (c) 22 (d) 24  
 (e) None of these

$$(15 - 6) = 9 \times 1 = 9$$

$$(9 - 5) = 4 \times 2 = 8$$

$$(8 - 4) = 4 \times 3 = 12$$

$$(12 - 3) = 9 \times 4 = 36$$

$$(36 - 2) = 34 \times 5 = 170$$

3. 7 6 10 27 104 515  
 9 (A) (B) (C) (D) (E)  
 What will come in the place of (D)?  
 (a) 152 (b) 156  
 (c) 108 (d) 112  
 (e) None of these

6. 8, 11, 17, 47, 128, 371, 1100  
 (a) 11 (b) 47  
 (c) ~~17~~ (d) 371  
 (e) 128
7. 1, 5, 13, 31, 61, 125, 253  
 (a) 1 (b) 5  
 (c) ~~31~~ (d) 61  
 (e) 125

$$8 \times 3 - 13 = 11$$

$$11 \times 3 - 13 = 20$$

$$20 \times 3 - 13 = 47$$

$$47 \times 3 - 13 = 128$$

$$1 \times 2 + 3 = 5$$

$$5 \times 2 + 3 = 13$$

$$13 \times 2 + 3 = 29$$

$$29 \times 2 + 3 = 61$$

$$61 \times 2 + 3 = 125$$

$$125 \times 2 + 3 = 253$$

8. 11, 18, 29, 42, 59, 80, 101  
 (a) 42 (b) 18  
 (c) 29 (d) 59  
 (e) None of these

→ difference of prime nos.

$$2 + 7 = 9 \times 1 = 9$$

$$9 + 11 = 16 \times 2 = 32$$

9. 2, 9, ~~10~~, 105, 436, 2195, 13182  
 ... 100 ... 200 ...

9. (e) None of these  
(a) 2, 9, ~~32~~, 105, 436, 2195, 13182  
(b) 2195  
(c) 9  
(d) 32  
(e) None of these
10. 5, 55, 495, 3465, 17325, 34650, 51975  
(a) 495  
(b) 34650  
(c) 55  
(d) 17325  
(e) None of these

11. 3, 7, 16, 32, 56, 93, 142  
(a) 56  
(b) 16  
(c) 32  
(d) 7  
(e) None of these
12. 4, 5, 12, ~~32~~, 160, 805, 4835  
(a) 12  
(b) 160  
(c) 38  
(d) 805  
(e) None of these

$$2+7=9 \times 1 = 9$$
$$9+6=15 \times 2 = 30$$
$$30+5=35 \times 3 = 105$$
$$105+4=109 \times 4 = 436.$$
$$436+3=469 \times 5 =$$

$$\cancel{\times 11} / \times 9 \quad | \quad \times 7 \quad | \quad \times 5 \quad | \quad \times 3 \quad | \quad \cancel{\times 1}$$