

JOH. KÄIS

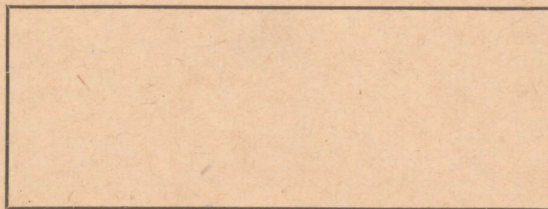
Õpilase arvutusvihk

1. õppeaasta

SÜGISEST — JÕULUNI

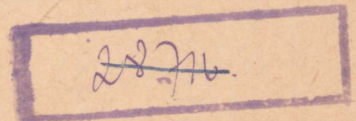
I-B VIHK

$11 + 2 = 13$



(ÕPILASE NIMI)

VIIES TRÜKK



K. K.-Ü. „TÖÖKOOLI“ KIRJASTUS
TALLINN, 1940

Tühjad leheküljed on õpilastele
iseseisvaks tööks

(näiteks arvtabelite või sama autori „Arvutuskaartide“ järgi jne.)

Et lugemine sel astmel õpilasile veel raskusi teeb, lahendatakse sõnastatud ülesandeid vaid klassi ühistöös suuliselt.

12580

(Nimi)

Bibliotheca
Universitatis
Tartuensis
1940: 01362

1
ARHIIVKOOGU
2-56699



+

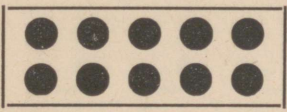


=



(Kuupäev)

KUJUTAN
ARVUD 11-20:



10 + 1 = 11

11 = 10 + 1

10 + 2 =

12 = 10 +

Empty rectangular box for writing the number 11.

Empty rectangular box for writing the number 12.

Empty rectangular box for writing the number 13.

Empty rectangular box for writing the number 14.

Empty rectangular box for writing the number 15.

Empty rectangular box for writing the number 16.

Empty rectangular box for writing the number 17.

Empty rectangular box for writing the number 18.

Empty rectangular box for writing the number 19.

Dotted lines for writing the numbers 11 through 20.

(Nimi)

SAAN 10-SENDISELE LISA...

(Kuupäev)

$$1) \begin{array}{r} 10 \\ \underline{2} \end{array} \quad \begin{array}{r} 10 \\ \underline{5} \end{array} \quad \begin{array}{r} 10 \\ \underline{8} \end{array} \quad \begin{array}{r} 10 \\ \underline{7} \end{array}$$

$$2) \begin{array}{r} 10 \\ \underline{6} \end{array} \quad \begin{array}{r} 10 \\ \underline{4} \end{array} \quad \begin{array}{r} 10 \\ \underline{9} \end{array} \quad \begin{array}{r} 10 \\ \underline{3} \end{array}$$

$$\begin{array}{r} 16 \\ \underline{-6} \end{array} \quad \begin{array}{r} 18 \\ \underline{-8} \end{array} \quad \begin{array}{r} 17 \\ \underline{-7} \end{array} \quad \begin{array}{r} 13 \\ \underline{-3} \end{array}$$

$$\begin{array}{r} 14 \\ \underline{-4} \end{array} \quad \begin{array}{r} 19 \\ \underline{-9} \end{array} \quad \begin{array}{r} 12 \\ \underline{-2} \end{array} \quad \begin{array}{r} 15 \\ \underline{-5} \end{array}$$

3) $10 + 1 =$

4) $10 + 2 =$

5) $12 - 2 =$

$10 + 4 =$

$10 + 7 =$

$14 - 4 =$

$10 + 3 =$

$10 + 10 =$

$11 - 1 =$

$10 + 5 =$

$10 + 9 =$

$13 - 3 =$

$10 + 6 =$

$10 + 8 =$

$15 - 5 =$

6) $16 - 6 =$

7) $10 + \dots = 14$

8) $10 + \dots = 11$

$18 - 8 =$

$10 + \dots = 16$

$10 + \dots = 18$

$17 - 7 =$

$10 + \dots = 19$

$10 + \dots = 20$

$19 - 9 =$

$10 + \dots = 12$

$10 + \dots = 13$

$10 - 10 =$

$10 + \dots = 15$

$10 + \dots = 17$

9) $16 - \dots = 10$

10) $19 - \dots = 10$

11) $\dots - 5 = 10$

$18 - \dots = 10$

$14 - \dots = 10$

$\dots - 8 = 10$

$15 - \dots = 10$

$17 - \dots = 10$

$\dots - 2 = 10$

$12 - \dots = 10$

$13 - \dots = 10$

$\dots - 7 = 10$

(Nimi)

(Mida arvutan)

(Kuupäev)

1) $6 + 10 =$

$2 + 10 =$

$5 + 10 =$

$8 + 10 =$

$1 + 10 =$

2) $3 + 10 =$

$9 + 10 =$

$7 + 10 =$

$4 + 10 =$

$10 + 10 =$

3) $11 - 10 =$

$16 - 10 =$

$13 - 10 =$

$19 - 10 =$

$18 - 10 =$

4) $20 - 10 =$

$17 - 10 =$

$14 - 10 =$

$12 - 10 =$

$15 - 10 =$

5) $\dots + 10 = 15$

$\dots + 10 = 12$

$\dots + 10 = 17$

$\dots + 10 = 14$

$\dots + 10 = 18$

6) $\dots - 10 = 4$

$\dots - 10 = 6$

$\dots - 10 = 9$

$\dots - 10 = 2$

$\dots - 10 = 7$

7)
$$\begin{array}{r} 2 \\ \underline{2} \end{array} \quad \begin{array}{r} 12 \\ \underline{2} \end{array} \quad \begin{array}{r} 2 \\ \underline{12} \end{array}$$

8)
$$\begin{array}{r} 4 \\ \underline{4} \end{array} \quad \begin{array}{r} 14 \\ \underline{4} \end{array} \quad \begin{array}{r} 4 \\ \underline{14} \end{array}$$

9)
$$\begin{array}{r} 3 \\ \underline{3} \end{array} \quad \begin{array}{r} 13 \\ \underline{3} \end{array} \quad \begin{array}{r} 3 \\ \underline{13} \end{array}$$

10)
$$\begin{array}{r} 3 \\ \underline{2} \end{array} \quad \begin{array}{r} 13 \\ \underline{2} \end{array} \quad \begin{array}{r} 5 \\ \underline{3} \end{array}$$

$$\begin{array}{r} 15 \\ \underline{3} \end{array}$$

11)
$$\begin{array}{r} 4 \\ \underline{5} \end{array}$$

$$\begin{array}{r} 14 \\ \underline{5} \end{array}$$

$$\begin{array}{r} 1 \\ \underline{7} \end{array}$$

$$\begin{array}{r} 11 \\ \underline{7} \end{array}$$

12)
$$\begin{array}{r} 6 \\ \underline{-1} \end{array} \quad \begin{array}{r} 16 \\ \underline{-1} \end{array} \quad \begin{array}{r} 8 \\ \underline{-2} \end{array} \quad \begin{array}{r} 18 \\ \underline{-2} \end{array}$$

13)
$$\begin{array}{r} 7 \\ \underline{-3} \end{array}$$

$$\begin{array}{r} 17 \\ \underline{-3} \end{array}$$

$$\begin{array}{r} 5 \\ \underline{-4} \end{array}$$

$$\begin{array}{r} 15 \\ \underline{-4} \end{array}$$

(Nimi)

(Mida arvutan)

(Kuupäev)

1) $6 + 3 =$

2) $1 + 8 =$

3) $2 + 7 =$

$16 + 3 =$

$11 + 8 =$

$12 + 7 =$

$6 + 13 =$

$1 + 18 =$

$2 + 17 =$

$5 + 2 =$

$3 + 4 =$

$4 + 4 =$

$15 + 2 =$

$13 + 4 =$

$14 + 5 =$

$5 + 12 =$

$3 + 14 =$

$4 + 15 =$

4) $6 - 5 =$

5) $9 - 3 =$

6) $7 - 5 =$

$16 - 5 =$

$19 - 3 =$

$17 - 5 =$

$7 - 4 =$

$8 - 6 =$

$9 - 7 =$

$17 - 4 =$

$18 - 6 =$

$19 - 7 =$

7)
$$\begin{array}{r} 5 \\ 4 \end{array}$$

$$\begin{array}{r} 15 \\ 4 \end{array}$$

$$\begin{array}{r} 2 \\ 5 \end{array}$$

$$\begin{array}{r} 12 \\ 5 \end{array}$$

8)
$$\begin{array}{r} 3 \\ 6 \end{array}$$

$$\begin{array}{r} 13 \\ 6 \end{array}$$

$$\begin{array}{r} 8 \\ 1 \end{array}$$

$$\begin{array}{r} 18 \\ 1 \end{array}$$

9)
$$\begin{array}{r} 6 \\ -5 \end{array}$$

$$\begin{array}{r} 16 \\ -5 \end{array}$$

$$\begin{array}{r} 8 \\ -3 \end{array}$$

$$\begin{array}{r} 18 \\ -3 \end{array}$$

10)
$$\begin{array}{r} 7 \\ -6 \end{array}$$

$$\begin{array}{r} 17 \\ -6 \end{array}$$

$$\begin{array}{r} 9 \\ -5 \end{array}$$

$$\begin{array}{r} 19 \\ -5 \end{array}$$

11)
$$\begin{array}{r} 4 \\ \dots \\ 8 \end{array}$$

$$\begin{array}{r} 14 \\ \dots \\ 18 \end{array}$$

$$\begin{array}{r} 3 \\ \dots \\ 5 \end{array}$$

$$\begin{array}{r} 13 \\ \dots \\ 15 \end{array}$$

12)
$$\begin{array}{r} 6 \\ - \\ 2 \end{array}$$

$$\begin{array}{r} 16 \\ - \\ 12 \end{array}$$

$$\begin{array}{r} \dots \\ -1 \\ 4 \end{array}$$

$$\begin{array}{r} \dots \\ -1 \\ 14 \end{array}$$

LAPSED KLASSIS.

1) $11 + 1 =$

$12 + 4 =$

$13 + 4 =$

$12 + 3 =$

2) $13 + 3 =$

$18 + 2 =$

$19 + 1 =$

$16 + 2 =$

3) $14 + 4 =$

$15 + 5 =$

$11 + 4 =$

$17 + 3 =$

4) $14 - 3 =$

$15 - 3 =$

$13 - 2 =$

$19 - 3 =$

5) $19 - 4 =$

$19 - 2 =$

$18 - 2 =$

$18 - 3 =$

6) $16 - 4 =$

$17 - 4 =$

$18 - 5 =$

$18 - 4 =$

7) $\begin{array}{r} 12 \\ \underline{3} \end{array}$

$\begin{array}{r} 14 \\ \underline{4} \end{array}$

$\begin{array}{r} 13 \\ \underline{3} \end{array}$

$\begin{array}{r} 16 \\ \underline{2} \end{array}$

8) $\begin{array}{r} 15 \\ \underline{3} \end{array}$

$\begin{array}{r} 12 \\ \underline{2} \end{array}$

$\begin{array}{r} 17 \\ \underline{2} \end{array}$

$\begin{array}{r} 11 \\ \underline{5} \end{array}$

9) $\begin{array}{r} 19 \\ \underline{1} \end{array}$

$\begin{array}{r} 10 \\ \underline{10} \end{array}$

$\begin{array}{r} 13 \\ \underline{2} \end{array}$

$\begin{array}{r} 14 \\ \underline{3} \end{array}$

10) $\begin{array}{r} 12 \\ \underline{4} \end{array}$

$\begin{array}{r} 16 \\ \underline{3} \end{array}$

$\begin{array}{r} 18 \\ \underline{1} \end{array}$

$\begin{array}{r} 14 \\ \underline{5} \end{array}$

11) $\begin{array}{r} 16 \\ \underline{-4} \end{array}$

$\begin{array}{r} 15 \\ \underline{-2} \end{array}$

$\begin{array}{r} 16 \\ \underline{-3} \end{array}$

$\begin{array}{r} 19 \\ \underline{-2} \end{array}$

12) $\begin{array}{r} 17 \\ \underline{-5} \end{array}$

$\begin{array}{r} 14 \\ \underline{-2} \end{array}$

$\begin{array}{r} 18 \\ \underline{-5} \end{array}$

$\begin{array}{r} 16 \\ \underline{-2} \end{array}$

13) $\begin{array}{r} 14 \\ \underline{-3} \end{array}$

$\begin{array}{r} 16 \\ \underline{-5} \end{array}$

$\begin{array}{r} 19 \\ \underline{-4} \end{array}$

$\begin{array}{r} 17 \\ \underline{-3} \end{array}$

14) $\begin{array}{r} 18 \\ \underline{-4} \end{array}$

$\begin{array}{r} 15 \\ \underline{-3} \end{array}$

$\begin{array}{r} 19 \\ \underline{-5} \end{array}$

$\begin{array}{r} 17 \\ \underline{-4} \end{array}$

(Mida arvutan)

(Kuupäev)

1) $12 + 5 =$

2) $14 + 5 =$

3) $12 + 6 =$

$11 + 7 =$

$12 + 7 =$

$10 + 9 =$

$13 + 6 =$

$11 + 6 =$

$13 + 5 =$

$11 + 8 =$

$13 + 5 =$

$11 + 7 =$

4) $18 - 5 =$

5) $19 - 7 =$

6) $18 - 4 =$

$18 - 7 =$

$18 - 6 =$

$17 - 6 =$

$16 - 5 =$

$17 - 5 =$

$19 - 5 =$

$19 - 6 =$

$19 - 8 =$

$19 - 3 =$

7) $\begin{array}{r} 12 \\ -4 \\ \hline \end{array}$

$\begin{array}{r} 4 \\ 12 \\ \hline \end{array}$

$\begin{array}{r} 15 \\ -3 \\ \hline \end{array}$

$\begin{array}{r} 3 \\ 15 \\ \hline \end{array}$

8) $\begin{array}{r} 14 \\ -5 \\ \hline \end{array}$

$\begin{array}{r} 5 \\ 14 \\ \hline \end{array}$

$\begin{array}{r} 16 \\ -3 \\ \hline \end{array}$

$\begin{array}{r} 3 \\ 16 \\ \hline \end{array}$

9) $\begin{array}{r} 11 \\ -7 \\ \hline \end{array}$

$\begin{array}{r} 7 \\ 11 \\ \hline \end{array}$

$\begin{array}{r} 13 \\ -6 \\ \hline \end{array}$

$\begin{array}{r} 6 \\ 13 \\ \hline \end{array}$

10) $\begin{array}{r} 12 \\ -7 \\ \hline \end{array}$

$\begin{array}{r} 7 \\ 12 \\ \hline \end{array}$

$\begin{array}{r} 15 \\ -2 \\ \hline \end{array}$

$\begin{array}{r} 2 \\ 15 \\ \hline \end{array}$

11) $\begin{array}{r} 16 \\ -5 \\ \hline \end{array}$

$\begin{array}{r} 18 \\ -4 \\ \hline \end{array}$

$\begin{array}{r} 14 \\ -3 \\ \hline \end{array}$

$\begin{array}{r} 19 \\ -6 \\ \hline \end{array}$

12) $\begin{array}{r} 13 \\ -2 \\ \hline \end{array}$

$\begin{array}{r} 15 \\ -4 \\ \hline \end{array}$

$\begin{array}{r} 19 \\ -1 \\ \hline \end{array}$

$\begin{array}{r} 17 \\ -3 \\ \hline \end{array}$

13) $\begin{array}{r} 18 \\ -2 \\ \hline \end{array}$

$\begin{array}{r} 15 \\ -3 \\ \hline \end{array}$

$\begin{array}{r} 16 \\ -3 \\ \hline \end{array}$

$\begin{array}{r} 19 \\ -7 \\ \hline \end{array}$

14) $\begin{array}{r} 17 \\ -6 \\ \hline \end{array}$

$\begin{array}{r} 14 \\ -4 \\ \hline \end{array}$

$\begin{array}{r} 18 \\ -5 \\ \hline \end{array}$

$\begin{array}{r} 19 \\ -4 \\ \hline \end{array}$

(Nimi)

(Mida arvutan)

(Kuupäev)

$$1) \begin{array}{r} 12 \\ \underline{2} \end{array} \quad \begin{array}{r} 13 \\ \underline{1} \end{array} \quad \begin{array}{r} 15 \\ \underline{2} \end{array} \quad \begin{array}{r} 17 \\ \underline{2} \end{array} \quad 2) \begin{array}{r} 18 \\ \underline{1} \end{array} \quad \begin{array}{r} 14 \\ \underline{2} \end{array} \quad \begin{array}{r} 11 \\ \underline{3} \end{array} \quad \begin{array}{r} 16 \\ \underline{2} \end{array}$$

$$3) \begin{array}{r} 5 \\ \underline{13} \end{array} \quad \begin{array}{r} 6 \\ \underline{13} \end{array} \quad \begin{array}{r} 12 \\ \underline{5} \end{array} \quad \begin{array}{r} 11 \\ \underline{7} \end{array} \quad 4) \begin{array}{r} 4 \\ \underline{13} \end{array} \quad \begin{array}{r} 4 \\ \underline{14} \end{array} \quad \begin{array}{r} 15 \\ \underline{3} \end{array} \quad \begin{array}{r} 11 \\ \underline{6} \end{array}$$

$$5) \begin{array}{r} 14 \\ \underline{3} \end{array} \quad \begin{array}{r} 11 \\ \underline{5} \end{array} \quad \begin{array}{r} 2 \\ \underline{17} \end{array} \quad \begin{array}{r} 3 \\ \underline{16} \end{array} \quad 6) \begin{array}{r} 15 \\ \underline{1} \end{array} \quad \begin{array}{r} 13 \\ \underline{2} \end{array} \quad \begin{array}{r} 1 \\ \underline{18} \end{array} \quad \begin{array}{r} 3 \\ \underline{14} \end{array}$$

$$7) \begin{array}{r} 12 \\ \underline{-1} \end{array} \quad \begin{array}{r} 14 \\ \underline{-2} \end{array} \quad \begin{array}{r} 13 \\ \underline{-3} \end{array} \quad \begin{array}{r} 16 \\ \underline{-3} \end{array} \quad 8) \begin{array}{r} 17 \\ \underline{-2} \end{array} \quad \begin{array}{r} 11 \\ \underline{-9} \end{array} \quad \begin{array}{r} 18 \\ \underline{-3} \end{array} \quad \begin{array}{r} 15 \\ \underline{-2} \end{array}$$

$$9) \begin{array}{r} 19 \\ \underline{-4} \end{array} \quad \begin{array}{r} 18 \\ \underline{-5} \end{array} \quad \begin{array}{r} 19 \\ \underline{-6} \end{array} \quad \begin{array}{r} 17 \\ \underline{-7} \end{array} \quad 10) \begin{array}{r} 18 \\ \underline{-6} \end{array} \quad \begin{array}{r} 17 \\ \underline{-5} \end{array} \quad \begin{array}{r} 16 \\ \underline{-5} \end{array} \quad \begin{array}{r} 18 \\ \underline{-4} \end{array}$$

$$11) 14 + \dots = 18 \quad 12) 5 + \dots = 17 \quad 13) 19 - \dots = 14$$

$$13 + \dots = 16 \quad 2 + \dots = 16 \quad 15 - \dots = 12$$

$$16 + \dots = 19 \quad 4 + \dots = 16 \quad 18 - \dots = 13$$

$$12 + \dots = 17 \quad 7 + \dots = 18 \quad 19 - \dots = 15$$

$$15 + \dots = 18 \quad 3 + \dots = 17 \quad 17 - \dots = 11$$

$$11 + \dots = 19 \quad 6 + \dots = 18 \quad 16 - \dots = 12$$

(Nimi)

KORDAMIST.

(Kuupäev)

$$\begin{array}{r}
 1) \quad \begin{array}{r} 2 \\ 3 \\ \hline 4 \end{array} \quad \begin{array}{r} 1 \\ 7 \\ \hline 2 \end{array} \quad \begin{array}{r} 2 \\ 2 \\ \hline 5 \end{array} \quad \begin{array}{r} 3 \\ 4 \\ \hline 1 \end{array} \quad \begin{array}{r} 4 \\ 4 \\ \hline 2 \end{array} \quad \begin{array}{r} 2) \quad \begin{array}{r} 2 \\ 5 \\ \hline 2 \end{array} \quad \begin{array}{r} 3 \\ 5 \\ \hline 1 \end{array} \quad \begin{array}{r} 1 \\ 6 \\ \hline 2 \end{array} \quad \begin{array}{r} 1 \\ 5 \\ \hline 3 \end{array} \quad \begin{array}{r} 3 \\ 4 \\ \hline 2 \end{array}
 \end{array}$$

$$\begin{array}{r}
 3) \quad \begin{array}{r} 3 \\ 6 \\ \hline 1 \end{array} \quad \begin{array}{r} 2 \\ 4 \\ \hline 3 \end{array} \quad \begin{array}{r} 2 \\ 6 \\ \hline 2 \end{array} \quad \begin{array}{r} 2 \\ 4 \\ \hline 1 \end{array} \quad \begin{array}{r} 1 \\ 7 \\ \hline 1 \end{array} \quad 4) \quad \begin{array}{r} 1 \\ 8 \\ \hline 1 \end{array} \quad \begin{array}{r} 3 \\ 5 \\ \hline 2 \end{array} \quad \begin{array}{r} 3 \\ 3 \\ \hline 3 \end{array} \quad \begin{array}{r} 4 \\ 3 \\ \hline 3 \end{array} \quad \begin{array}{r} 2 \\ 2 \\ \hline 5 \end{array}
 \end{array}$$

5) $8 - 2 - 2 =$ 6) $6 - 2 - 3 =$ 7) $7 - 2 - 3 =$

$7 - 3 - 3 =$ $9 - 2 - 4 =$ $9 - 5 - 1 =$

$9 - 4 - 4 =$ $8 - 3 - 4 =$ $8 - 1 - 6 =$

$10 - 5 - 5 =$ $10 - 5 - 4 =$ $9 - 4 - 3 =$

$9 - 6 - 2 =$ $9 - 7 - 1 =$ $10 - 2 - 5 =$

8) $2 + 6 - 4 =$ 9) $7 - 2 + 4 =$ 10) $4 + 4 - 5 =$

$10 - 7 + 5 =$ $1 + 6 - 4 =$ $3 + 6 - 7 =$

$6 + 3 - 8 =$ $9 - 6 + 7 =$ $8 - 5 + 2 =$

$9 - 7 + 4 =$ $5 - 5 + 8 =$ $7 - 7 + 6 =$

11) $3 + 2 + \dots = 9$ 12) $8 - 5 - \dots = 1$ 13) $4 + 3 - \dots = 2$

$2 + 4 + \dots = 8$ $10 - 4 - \dots = 2$ $6 - 5 + \dots = 8$

$1 + 3 + \dots = 7$ $9 - 6 - \dots = 0$ $8 - 4 + \dots = 7$

(Nimi)

LIIDAN JA LAHUTAN MITMET VIISI.

(Kuupäev)

1) $5 + 1 + 2 =$

$5 + 3 =$

$6 + 2 =$

2) $4 + 2 + 3 =$

$4 + 5 =$

$6 + 1 =$

3) $7 + 2 + 1 =$

$7 + 3 =$

$9 + 1 =$

4) $3 + 4 + 2 =$

$3 + 6 =$

$7 + 2 =$

5) $5 + 3 + 1 =$

$5 + 4 =$

$8 + 1 =$

6) $6 + 1 + 2 =$

$6 + 3 =$

$7 + 2 =$

7) $8 - 2 - 3 =$

$8 - 5 =$

$7 - 3 - 1 =$

$7 - \dots =$

$9 - 4 - 4 =$

$9 - \dots =$

8) $10 - 5 - 1 =$

$10 - 6 =$

$9 - 4 - 2 =$

$9 - \dots =$

$7 - 2 - 3 =$

$7 - \dots =$

9) $7 - 2 - 3 =$

$7 - \dots =$

$8 - 5 - 1 =$

$8 - \dots =$

$9 - 3 - 3 =$

$9 - \dots =$

10) $\frac{6}{2} \quad \frac{1}{2} \quad \frac{2}{1} \quad \frac{3}{3} \quad \frac{5}{1} \quad 11) \quad \frac{1}{2} \quad \frac{2}{5} \quad \frac{3}{2} \quad \frac{6}{1} \quad \frac{2}{3}$

$\frac{\dots}{9} \quad \frac{\dots}{8} \quad \frac{\dots}{7} \quad \frac{\dots}{10} \quad \frac{\dots}{9} \quad \frac{\dots}{6} \quad \frac{\dots}{9} \quad \frac{\dots}{7} \quad \frac{\dots}{10} \quad \frac{\dots}{8}$

12) $7 \quad 9 \quad 6 \quad 7 \quad 8 \quad 13)$

$\frac{\dots}{2} \quad \frac{\dots}{1} \quad \frac{\dots}{0} \quad \frac{\dots}{4} \quad \frac{\dots}{2} \quad \frac{-3}{3} \quad \frac{-9}{0} \quad \frac{-7}{2} \quad \frac{-3}{5} \quad \frac{-6}{1}$

(Nimi)

(Mida arvutan)

(Kuupäev)

1) $11 + 4 + 3 =$ 2) $12 + 1 + 4 =$ 3) $18 - 3 - 3 =$

$13 + 5 + 1 =$ $11 + 3 + 3 =$ $16 - 5 - 1 =$

$12 + 3 + 4 =$ $14 + 2 + 2 =$ $19 - 2 - 7 =$

$14 + 1 + 3 =$ $12 + 5 + 1 =$ $17 - 1 - 3 =$

$11 + 2 + 6 =$ $15 + 1 + 3 =$ $18 - 2 - 5 =$

$13 + 3 + 2 =$ $13 + 4 + 2 =$ $15 - 3 - 2 =$

4) $19 - 4 - 4 =$ 5) $13 + 3 - 5 =$ 6) $15 - 4 + 3 =$

$19 - 5 - 3 =$ $17 - 2 + 4 =$ $12 + 6 - 7 =$

$16 - 1 - 4 =$ $14 + 5 - 3 =$ $18 - 6 + 4 =$

$18 - 3 - 5 =$ $18 - 7 + 4 =$ $17 + 2 - 3 =$

$17 - 4 - 2 =$ $16 + 1 - 6 =$ $16 - 5 + 4 =$

$15 - 3 - 1 =$ $15 - 3 + 2 =$ $13 + 3 - 2 =$

7) $11 + 2 + \dots = 16$

8) $16 - 4 - \dots = 11$

$14 + 3 + \dots = 19$

$19 - 5 - \dots = 10$

$12 + 5 + \dots = 18$

$17 - 3 - \dots = 12$

$13 + 2 + \dots = 19$

$18 - 6 - \dots = 11$

$10 + 6 + \dots = 18$

$19 - 4 - \dots = 10$

$14 + 1 + \dots = 17$

$15 - 1 - \dots = 13$

(Nimi)

(Mida arvutan)

(Küüpäev)

Arvutan niiviisi: $14 - 11 = 14 - 10 - 1 = 3$

$$\begin{array}{r} 1) \quad 14 \quad 16 \quad 19 \quad 18 \\ \quad \underline{-11} \quad \underline{-11} \quad \underline{-17} \quad \underline{-12} \end{array}$$

$$\begin{array}{r} 2) \quad 17 \quad 19 \quad 18 \quad 17 \\ \quad \underline{-13} \quad \underline{-11} \quad \underline{-13} \quad \underline{-15} \end{array}$$

$$\begin{array}{r} 3) \quad 19 \quad 19 \quad 17 \quad 14 \\ \quad \underline{-18} \quad \underline{-12} \quad \underline{-16} \quad \underline{-12} \end{array}$$

$$\begin{array}{r} 4) \quad 18 \quad 18 \quad 16 \quad 19 \\ \quad \underline{-11} \quad \underline{-17} \quad \underline{-15} \quad \underline{-16} \end{array}$$

$$\begin{array}{r} 5) \quad 15 \quad 18 \quad 16 \quad 19 \\ \quad \underline{-13} \quad \underline{-14} \quad \underline{-13} \quad \underline{-15} \end{array}$$

$$\begin{array}{r} 6) \quad 15 \quad 17 \quad 14 \quad 19 \\ \quad \underline{-12} \quad \underline{-14} \quad \underline{-12} \quad \underline{-13} \end{array}$$

$$\begin{array}{r} 7) \quad 19 \quad 16 \quad 18 \quad 19 \\ \quad \underline{-14} \quad \underline{-12} \quad \underline{-15} \quad \underline{-17} \end{array}$$

$$\begin{array}{r} 8) \quad 18 \quad 17 \quad 19 \quad 16 \\ \quad \underline{-16} \quad \underline{-12} \quad \underline{-18} \quad \underline{-14} \end{array}$$

$$\begin{array}{r} 9) \quad 14 \quad 18 \quad 16 \quad 13 \\ \quad \underline{\quad} \quad \underline{\quad} \quad \underline{\quad} \quad \underline{\quad} \\ \quad \quad 2 \quad \quad 3 \quad \quad 5 \quad \quad 1 \end{array}$$

$$\begin{array}{r} 10) \quad 19 \quad 17 \quad 15 \quad 18 \\ \quad \underline{\quad} \quad \underline{\quad} \quad \underline{\quad} \quad \underline{\quad} \\ \quad \quad 7 \quad \quad 2 \quad \quad 3 \quad \quad 4 \end{array}$$

$$\begin{array}{r} 11) \quad 19 \quad 17 \quad 18 \quad 16 \\ \quad \underline{\quad} \quad \underline{\quad} \quad \underline{\quad} \quad \underline{\quad} \\ \quad \quad 4 \quad \quad 4 \quad \quad 6 \quad \quad 1 \end{array}$$

$$\begin{array}{r} 12) \quad 18 \quad 19 \quad 14 \quad 16 \\ \quad \underline{\quad} \quad \underline{\quad} \quad \underline{\quad} \quad \underline{\quad} \\ \quad \quad 5 \quad \quad 2 \quad \quad 3 \quad \quad 3 \end{array}$$

$$\begin{array}{r} 13) \quad \underline{\quad} \quad \underline{\quad} \quad \underline{\quad} \quad \underline{\quad} \\ \quad \quad 5 \quad \quad 5 \quad \quad 8 \quad \quad 2 \end{array}$$

$$\begin{array}{r} 14) \quad \underline{\quad} \quad \underline{\quad} \quad \underline{\quad} \quad \underline{\quad} \\ \quad \quad 1 \quad \quad 2 \quad \quad 1 \quad \quad 7 \end{array}$$

(Nimi)

*(Mida arvutan)**(Kuupäev)*

1) $13 - 12 =$

$16 - 13 =$

$14 - 11 =$

$18 - 16 =$

$19 - 14 =$

2) $15 - 13 =$

$17 - 12 =$

$12 - 11 =$

$19 - 13 =$

$18 - 12 =$

3) $17 - 11 =$

$19 - 16 =$

$16 - 15 =$

$14 - 13 =$

$19 - 18 =$

4) $18 - 15 =$

$17 - 14 =$

$19 - 17 =$

$16 - 11 =$

$15 - 14 =$

5) $14 - 12 =$

$18 - 14 =$

$17 - 15 =$

$15 - 13 =$

$16 - 12 =$

6) $19 - 16 =$

$15 - 12 =$

$18 - 17 =$

$17 - 14 =$

$17 - 13 =$

7) $12 - \dots = 11$

$14 - \dots = 12$

$16 - \dots = 14$

$18 - \dots = 15$

8) $18 - \dots = 12$

$19 - \dots = 11$

$17 - \dots = 11$

$16 - \dots = 12$

9) $15 + \dots = 18$

$12 + \dots = 19$

$10 + \dots = 15$

$11 + \dots = 17$

10) $11 + \dots = 14$

$19 - \dots = 13$

$15 + \dots = 17$

$14 - \dots = 12$

11) $15 - \dots = 13$

$11 + \dots = 17$

$18 - \dots = 13$

$13 + \dots = 15$

12) $\dots + 3 = 16$

$\dots + 8 = 19$

$\dots - 6 = 10$

$\dots - 3 = 14$

(Nimi)

TAHAN SAADA 20 SENTI.

(Kuupäev)



$$1) 19 + 1 = 20 \quad 2) 15 + \dots = 20 \quad 3) 12 + \dots = 20$$

$$16 + \dots = 20 \quad 17 + \dots = 20 \quad 11 + \dots = 20$$

$$18 + \dots = 20 \quad 14 + \dots = 20 \quad 13 + \dots = 20$$

$$4) 2 + 18 = \dots \quad 5) 6 + \dots = 20 \quad 6) 7 + \dots = 20$$

$$5 + \dots = 20 \quad 9 + \dots = 20 \quad 3 + \dots = 20$$

$$8 + \dots = 20 \quad 4 + \dots = 20 \quad 10 + \dots = 20$$

$$7) \begin{array}{r} 18 \\ \hline 20 \end{array} \quad \begin{array}{r} 14 \\ \hline 20 \end{array} \quad \begin{array}{r} 15 \\ \hline 20 \end{array} \quad \begin{array}{r} 17 \\ \hline 20 \end{array} \quad 8) \begin{array}{r} 16 \\ \hline 20 \end{array} \quad \begin{array}{r} 11 \\ \hline 20 \end{array} \quad \begin{array}{r} 12 \\ \hline 20 \end{array} \quad \begin{array}{r} 13 \\ \hline 20 \end{array}$$

$$9) \begin{array}{r} 10 \\ \hline 20 \end{array} \quad \begin{array}{r} 6 \\ \hline 20 \end{array} \quad \begin{array}{r} 9 \\ \hline 20 \end{array} \quad \begin{array}{r} 4 \\ \hline 20 \end{array} \quad 10) \begin{array}{r} 5 \\ \hline 20 \end{array} \quad \begin{array}{r} 7 \\ \hline 20 \end{array} \quad \begin{array}{r} 8 \\ \hline 20 \end{array} \quad \begin{array}{r} 4 \\ \hline 20 \end{array}$$

$$11) \begin{array}{r} 12 \\ 4 \\ \hline 16 \\ \hline 20 \end{array} \quad \begin{array}{r} 14 \\ 2 \\ \hline 16 \\ \hline 20 \end{array} \quad \begin{array}{r} 13 \\ 4 \\ \hline 17 \\ \hline 20 \end{array} \quad \begin{array}{r} 11 \\ 7 \\ \hline 18 \\ \hline 20 \end{array} \quad 12) \begin{array}{r} 11 \\ 4 \\ \hline 15 \\ \hline 20 \end{array} \quad \begin{array}{r} 10 \\ 2 \\ \hline 12 \\ \hline 20 \end{array} \quad \begin{array}{r} 12 \\ 5 \\ \hline 17 \\ \hline 20 \end{array} \quad \begin{array}{r} 11 \\ 2 \\ \hline 13 \\ \hline 20 \end{array}$$

(Nimi)

RAHA KULUB KA ...

(Kuupäev)

1) $20 - 2 =$

2) $20 - 1 =$

3) $20 - \dots = 15$

$20 - 4 =$

$20 - 6 =$

$20 - \dots = 19$

$20 - 5 =$

$20 - 9 =$

$20 - \dots = 17$

$20 - 3 =$

$20 - 8 =$

$20 - \dots = 16$

$20 - 7 =$

$20 - 10 =$

$20 - \dots = 12$

4) $20 - 18 =$

5) $20 - 11 =$

6) $20 - \dots = 5$

$20 - 19 =$

$20 - 16 =$

$20 - \dots = 7$

$20 - 15 =$

$20 - 13 =$

$20 - \dots = 1$

$20 - 17 =$

$20 - 12 =$

$20 - \dots = 9$

$20 - 14 =$

$20 - 17 =$

$20 - \dots = 2$

7)
$$\begin{array}{r} 20 \\ - 3 \\ \hline \end{array}$$

$$\begin{array}{r} 20 \\ - 6 \\ \hline \end{array}$$

$$\begin{array}{r} 20 \\ - 4 \\ \hline \end{array}$$

$$\begin{array}{r} 20 \\ - 9 \\ \hline \end{array}$$

8)
$$\begin{array}{r} 20 \\ - 10 \\ \hline \end{array}$$

$$\begin{array}{r} 20 \\ - 18 \\ \hline \end{array}$$

$$\begin{array}{r} 20 \\ - 17 \\ \hline \end{array}$$

$$\begin{array}{r} 20 \\ - 15 \\ \hline \end{array}$$

9)
$$\begin{array}{r} 20 \\ \hline \end{array}$$

$$\begin{array}{r} 20 \\ \hline \end{array}$$

$$\begin{array}{r} 20 \\ \hline \end{array}$$

$$\begin{array}{r} 20 \\ \hline \end{array}$$

10)
$$\begin{array}{r} 20 \\ \hline \end{array}$$

$$\begin{array}{r} 20 \\ \hline \end{array}$$

$$\begin{array}{r} 20 \\ \hline \end{array}$$

$$\begin{array}{r} 20 \\ \hline \end{array}$$

11)
$$\begin{array}{r} 20 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 20 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 20 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 20 \\ \hline 5 \end{array}$$

12)
$$\begin{array}{r} 20 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 20 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 20 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 20 \\ \hline 9 \end{array}$$

(Nimi)

ENNE 10 TÄIS, SIIS VEEL LISA . . .

(Kuupäev)

1) $9 + 1 + 1 = 11$

$8 + 2 + 2 =$

$7 + 3 + 2 =$

$6 + 4 + 1 =$

$5 + 5 + 2 =$

1a) $9 + 2 = 9 + 1 + 1 =$

$8 + 4 =$

$7 + 5 =$

$6 + 5 =$

$5 + 7 =$

2) $5 + 5 + 3 =$

$4 + 6 + 1 =$

$3 + 7 + 2 =$

$2 + 8 + 1 =$

$7 + 3 + 4 =$

2a) $5 + 8 = 5 + 5 + 3 =$

$4 + 7 =$

$3 + 9 =$

$2 + 9 =$

$7 + 7 =$

3) $6 + 4 + 3 =$

$4 + 6 + 2 =$

$7 + 3 + 5 =$

$9 + 1 + 4 =$

3a) $6 + 7 = 6 + 4 + 3 =$

$4 + 8 =$

$7 + 8 =$

$9 + 5 =$

4) $5 + 5 + 1 =$

$8 + 2 + 4 =$

$6 + 4 + 2 =$

$3 + 7 + 1 =$

4a) $5 + 6 = 5 + 5 + 1 =$

$8 + 6 =$

$6 + 6 =$

$3 + 8 =$

(Nimi)

(Mida arvutan)

(Kuupäev)

$$1) \begin{array}{r} 9 \\ \underline{1} \end{array} \quad \begin{array}{r} 9 \\ \underline{3} \end{array} \quad \begin{array}{r} 9 \\ \underline{5} \end{array} \quad \begin{array}{r} 9 \\ \underline{4} \end{array} \quad \begin{array}{r} 9 \\ \underline{2} \end{array} \quad 2) \begin{array}{r} 9 \\ \underline{8} \end{array} \quad \begin{array}{r} 9 \\ \underline{7} \end{array} \quad \begin{array}{r} 9 \\ \underline{9} \end{array} \quad \begin{array}{r} 9 \\ \underline{6} \end{array} \quad \begin{array}{r} 9 \\ \underline{10} \end{array}$$

$$3) \begin{array}{r} 8 \\ \underline{2} \end{array} \quad \begin{array}{r} 8 \\ \underline{4} \end{array} \quad \begin{array}{r} 8 \\ \underline{3} \end{array} \quad \begin{array}{r} 8 \\ \underline{5} \end{array} \quad \begin{array}{r} 8 \\ \underline{6} \end{array} \quad 4) \begin{array}{r} 8 \\ \underline{8} \end{array} \quad \begin{array}{r} 8 \\ \underline{7} \end{array} \quad \begin{array}{r} 8 \\ \underline{10} \end{array} \quad \begin{array}{r} 8 \\ \underline{9} \end{array} \quad \begin{array}{r} 8 \\ \underline{11} \end{array}$$

$$5) \begin{array}{r} 7 \\ \underline{3} \end{array} \quad \begin{array}{r} 7 \\ \underline{5} \end{array} \quad \begin{array}{r} 7 \\ \underline{7} \end{array} \quad \begin{array}{r} 7 \\ \underline{4} \end{array} \quad \begin{array}{r} 7 \\ \underline{6} \end{array} \quad 6) \begin{array}{r} 7 \\ \underline{5} \end{array} \quad \begin{array}{r} 7 \\ \underline{9} \end{array} \quad \begin{array}{r} 7 \\ \underline{7} \end{array} \quad \begin{array}{r} 8 \\ \underline{7} \end{array} \quad \begin{array}{r} 7 \\ \underline{8} \end{array}$$

$$7) \begin{array}{r} 6 \\ \underline{4} \end{array} \quad \begin{array}{r} 6 \\ \underline{6} \end{array} \quad \begin{array}{r} 6 \\ \underline{5} \end{array} \quad \begin{array}{r} 6 \\ \underline{8} \end{array} \quad \begin{array}{r} 8 \\ \underline{6} \end{array} \quad 8) \begin{array}{r} 6 \\ \underline{7} \end{array} \quad \begin{array}{r} 7 \\ \underline{6} \end{array} \quad \begin{array}{r} 6 \\ \underline{9} \end{array} \quad \begin{array}{r} 9 \\ \underline{6} \end{array} \quad \begin{array}{r} 6 \\ \underline{10} \end{array}$$

9) $9 + 4 =$

$8 + 6 =$

$6 + 6 =$

$7 + 4 =$

10) $6 + 5 =$

$9 + 3 =$

$7 + 5 =$

$9 + 8 =$

11) $6 + 7 =$

$8 + 8 =$

$7 + 6 =$

$9 + 7 =$

12) $8 + 5 =$

$9 + 9 =$

$7 + 8 =$

$6 + 9 =$

13) $8 + 7 =$

$9 + 5 =$

$9 + 9 =$

$8 + 4 =$

14) $7 + 7 =$

$6 + 8 =$

$7 + 9 =$

$9 + 6 =$

(Nimi)

(Mida arvutan)

(Kuupäev)

1) $5 + 5 =$

$5 + 6 =$

$6 + 5 =$

$5 + 7 =$

$7 + 5 =$

2) $5 + 9 =$

$9 + 5 =$

$5 + 8 =$

$8 + 5 =$

$5 + 10 =$

3) $4 + 6 =$

$6 + 4 =$

$4 + 8 =$

$8 + 4 =$

$4 + 7 =$

4) $7 + 4 =$

$4 + 9 =$

$9 + 4 =$

$3 + 7 =$

$7 + 3 =$

5) $3 + 9 =$

$9 + 3 =$

$3 + 8 =$

$8 + 3 =$

$2 + 9 =$

6) $7 + 9 =$

$9 + 7 =$

$6 + 8 =$

$8 + 6 =$

$7 + 8 =$

7) $\begin{array}{r} 5 \\ \underline{6} \end{array}$ $\begin{array}{r} 5 \\ \underline{8} \end{array}$ $\begin{array}{r} 4 \\ \underline{9} \end{array}$ $\begin{array}{r} 6 \\ \underline{7} \end{array}$ $\begin{array}{r} 5 \\ \underline{9} \end{array}$ 8) $\begin{array}{r} 4 \\ \underline{8} \end{array}$ $\begin{array}{r} 6 \\ \underline{9} \end{array}$ $\begin{array}{r} 4 \\ \underline{7} \end{array}$ $\begin{array}{r} 3 \\ \underline{8} \end{array}$ $\begin{array}{r} 2 \\ \underline{9} \end{array}$

9) $\begin{array}{r} 7 \\ \underline{6} \end{array}$ $\begin{array}{r} 8 \\ \underline{7} \end{array}$ $\begin{array}{r} 9 \\ \underline{6} \end{array}$ $\begin{array}{r} 7 \\ \underline{9} \end{array}$ $\begin{array}{r} 7 \\ \underline{8} \end{array}$ 10) $\begin{array}{r} 8 \\ \underline{5} \end{array}$ $\begin{array}{r} 8 \\ \underline{7} \end{array}$ $\begin{array}{r} 9 \\ \underline{5} \end{array}$ $\begin{array}{r} 8 \\ \underline{8} \end{array}$ $\begin{array}{r} 9 \\ \underline{9} \end{array}$

11) $\begin{array}{r} 8 \\ + \\ \underline{14} \end{array}$ $\begin{array}{r} 9 \\ + \\ \underline{13} \end{array}$ $\begin{array}{r} 6 \\ + \\ \underline{15} \end{array}$ $\begin{array}{r} 9 \\ + \\ \underline{17} \end{array}$ $\begin{array}{r} 8 \\ + \\ \underline{16} \end{array}$ 12) $\begin{array}{r} 9 \\ + \\ \underline{18} \end{array}$ $\begin{array}{r} 5 \\ + \\ \underline{12} \end{array}$ $\begin{array}{r} 6 \\ + \\ \underline{11} \end{array}$ $\begin{array}{r} 5 \\ + \\ \underline{13} \end{array}$ $\begin{array}{r} 4 \\ + \\ \underline{11} \end{array}$

Ex bibl. univ. Tart.

(Nimi)

ENNE LAHUTAN 10-NI, SIIS EDASI . . .

(Kuupäev)

1) $11 \overset{10}{-} 1 - 2 = 8$

$12 - 2 - 1 =$

$13 - 3 - 2 =$

$14 - 4 - 3 =$

$15 - 5 - 2 =$

1a) $11 - 3 = 11 \overset{10}{-} 1 - 2 =$

$12 - 3 =$

$13 - 5 =$

$14 - 7 =$

$15 - 7 =$

2) $16 - 6 - 1 =$

$17 - 7 - 2 =$

$18 - 8 - 1 =$

$14 - 4 - 2 =$

$12 - 2 - 4 =$

2a) $16 - 7 = 16 \overset{10}{-} 6 - 1 =$

$17 - 9 =$

$18 - 9 =$

$14 - 6 =$

$12 - 6 =$

3) $15 - 5 - 3 =$

$17 - 7 - 1 =$

$11 - 1 - 4 =$

$13 - 3 - 3 =$

3a) $15 - 8 =$

$17 - 8 =$

$11 - 5 =$

$13 - 6 =$

4) $11 - 1 - 5 =$

$14 - 4 - 4 =$

$12 - 2 - 5 =$

$15 - 5 - 4 =$

4a) $11 - 6 =$

$14 - 8 =$

$12 - 7 =$

$15 - 9 =$

(Nimi)

(Mida arvutan)

(Kuupäev)

1) $11 - 1 =$

2) $11 - 8 =$

3) $12 - 2 =$

$11 - 2 =$

$11 - 5 =$

$12 - 4 =$

$11 - 4 =$

$11 - 9 =$

$12 - 3 =$

$11 - 3 =$

$11 - 7 =$

$12 - 6 =$

$11 - 6 =$

$11 - 10 =$

$12 - 5 =$

4) $12 - 9 =$

5) $13 - 3 =$

6) $13 - 8 =$

$12 - 7 =$

$13 - 5 =$

$13 - 6 =$

$12 - 8 =$

$13 - 4 =$

$13 - 10 =$

$12 - 10 =$

$13 - 7 =$

$13 - 12 =$

$12 - 11 =$

$13 - 9 =$

$13 - 11 =$

7) $\begin{array}{r} 11 \\ -4 \\ \hline \end{array}$

$\begin{array}{r} 13 \\ -6 \\ \hline \end{array}$

$\begin{array}{r} 12 \\ -5 \\ \hline \end{array}$

$\begin{array}{r} 11 \\ -8 \\ \hline \end{array}$

8) $\begin{array}{r} 12 \\ -7 \\ \hline \end{array}$

$\begin{array}{r} 13 \\ -8 \\ \hline \end{array}$

$\begin{array}{r} 11 \\ -6 \\ \hline \end{array}$

$\begin{array}{r} 12 \\ -4 \\ \hline \end{array}$

9) $\begin{array}{r} 12 \\ -6 \\ \hline \end{array}$

$\begin{array}{r} 11 \\ -7 \\ \hline \end{array}$

$\begin{array}{r} 13 \\ -5 \\ \hline \end{array}$

$\begin{array}{r} 11 \\ -5 \\ \hline \end{array}$

10) $\begin{array}{r} 12 \\ -9 \\ \hline \end{array}$

$\begin{array}{r} 13 \\ -7 \\ \hline \end{array}$

$\begin{array}{r} 12 \\ -8 \\ \hline \end{array}$

$\begin{array}{r} 11 \\ -9 \\ \hline \end{array}$

11) $\begin{array}{r} 12 \\ - \\ \hline 8 \end{array}$

$\begin{array}{r} 11 \\ - \\ \hline 7 \end{array}$

$\begin{array}{r} 13 \\ - \\ \hline 9 \end{array}$

$\begin{array}{r} 12 \\ - \\ \hline 9 \end{array}$

12) $\begin{array}{r} 13 \\ - \\ \hline 7 \end{array}$

$\begin{array}{r} 12 \\ - \\ \hline 5 \end{array}$

$\begin{array}{r} 13 \\ - \\ \hline 9 \end{array}$

$\begin{array}{r} 11 \\ - \\ \hline 8 \end{array}$

(Nimi)

(Mida arvutan)

(Kuupäev)

1) $14 - 4 =$

$14 - 5 =$

$14 - 8 =$

$14 - 6 =$

$14 - 9 =$

2) $14 - 7 =$

$14 - 10 =$

$14 - 12 =$

$14 - 11 =$

$14 - 13 =$

3) $15 - 5 =$

$15 - 7 =$

$15 - 6 =$

$15 - 8 =$

$15 - 9 =$

4) $16 - 6 =$

$16 - 8 =$

$16 - 7 =$

$16 - 9 =$

$16 - 12 =$

5) $17 - 7 =$

$17 - 8 =$

$17 - 9 =$

$17 - 11 =$

$17 - 13 =$

6) $18 - 8 =$

$18 - 9 =$

$18 - 12 =$

$18 - 10 =$

$18 - 15 =$

7) $\begin{array}{r} 14 \\ - 6 \\ \hline \end{array}$

$\begin{array}{r} 15 \\ - 8 \\ \hline \end{array}$

$\begin{array}{r} 18 \\ - 9 \\ \hline \end{array}$

$\begin{array}{r} 17 \\ - 8 \\ \hline \end{array}$

8) $\begin{array}{r} 15 \\ - 6 \\ \hline \end{array}$

$\begin{array}{r} 14 \\ - 7 \\ \hline \end{array}$

$\begin{array}{r} 16 \\ - 8 \\ \hline \end{array}$

$\begin{array}{r} 14 \\ - 8 \\ \hline \end{array}$

9) $\begin{array}{r} 15 \\ - 9 \\ \hline \end{array}$

$\begin{array}{r} 14 \\ - 5 \\ \hline \end{array}$

$\begin{array}{r} 16 \\ - 9 \\ \hline \end{array}$

$\begin{array}{r} 15 \\ - 7 \\ \hline \end{array}$

10) $\begin{array}{r} 14 \\ - 6 \\ \hline \end{array}$

$\begin{array}{r} 16 \\ - 7 \\ \hline \end{array}$

$\begin{array}{r} 14 \\ - 9 \\ \hline \end{array}$

$\begin{array}{r} 15 \\ - 8 \\ \hline \end{array}$

11) $\begin{array}{r} 16 \\ - \\ \hline 8 \end{array}$

$\begin{array}{r} 13 \\ - \\ \hline 7 \end{array}$

$\begin{array}{r} 18 \\ - \\ \hline 9 \end{array}$

$\begin{array}{r} 15 \\ - \\ \hline 6 \end{array}$

12) $\begin{array}{r} - 7 \\ - \\ \hline 6 \end{array}$

$\begin{array}{r} - 8 \\ - \\ \hline 6 \end{array}$

$\begin{array}{r} - 7 \\ - \\ \hline 8 \end{array}$

$\begin{array}{r} - 9 \\ - \\ \hline 6 \end{array}$

(Nimi)

(Mida arvutan)

(Kuupäev)

$$1) \begin{array}{r} 4 \\ 7 \\ \hline \end{array} \quad \begin{array}{r} 5 \\ 8 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ 7 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ 9 \\ \hline \end{array} \quad \begin{array}{r} 3 \\ 8 \\ \hline \end{array} \quad 2) \begin{array}{r} 12 \\ -8 \\ \hline \end{array} \quad \begin{array}{r} 14 \\ -6 \\ \hline \end{array} \quad \begin{array}{r} 11 \\ -5 \\ \hline \end{array} \quad \begin{array}{r} 12 \\ -7 \\ \hline \end{array} \quad \begin{array}{r} 13 \\ -8 \\ \hline \end{array}$$

$$3) \begin{array}{r} 6 \\ 6 \\ \hline \end{array} \quad \begin{array}{r} 5 \\ 9 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ 7 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ 4 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ 8 \\ \hline \end{array} \quad 4) \begin{array}{r} 15 \\ -9 \\ \hline \end{array} \quad \begin{array}{r} 17 \\ -8 \\ \hline \end{array} \quad \begin{array}{r} 14 \\ -8 \\ \hline \end{array} \quad \begin{array}{r} 13 \\ -7 \\ \hline \end{array} \quad \begin{array}{r} 16 \\ -8 \\ \hline \end{array}$$

$$5) \begin{array}{r} 8 \\ 7 \\ \hline \end{array} \quad \begin{array}{r} 5 \\ 6 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ 9 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ 8 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ 5 \\ \hline \end{array} \quad 6) \begin{array}{r} 11 \\ -4 \\ \hline \end{array} \quad \begin{array}{r} 15 \\ -7 \\ \hline \end{array} \quad \begin{array}{r} 13 \\ -5 \\ \hline \end{array} \quad \begin{array}{r} 12 \\ -4 \\ \hline \end{array} \quad \begin{array}{r} 17 \\ -9 \\ \hline \end{array}$$

7) $8 + \dots = 16$

8) $\dots + 6 = 15$

9) $14 - \dots = 7$

$4 + \dots = 11$

$\dots + 5 = 12$

$17 - \dots = 9$

$9 + \dots = 14$

$\dots + 8 = 14$

$13 - \dots = 8$

$3 + \dots = 12$

$\dots + 4 = 13$

$15 - \dots = 6$

$7 + \dots = 13$

$\dots + 9 = 17$

$12 - \dots = 4$

10) $\dots - 6 = 5$

11) $6 + \dots = 13$

12) $\dots + 4 = 11$

$\dots - 7 = 8$

$13 - \dots = 4$

$\dots - 4 = 7$

$\dots - 8 = 3$

$9 + \dots = 18$

$\dots - 8 = 4$

$\dots - 7 = 6$

$15 - \dots = 7$

$\dots + 8 = 12$

$\dots - 5 = 7$

$8 + \dots = 12$

$\dots - 8 = 8$

(Nimi)

(Kuupäev)

KUIDAS SAAN KERGEMINI LIITA JA LAHUTADA.

1) $8 + 7 + 2 = 8 + \overset{10}{2} + 7 =$

$6 + 8 + 4 =$

$7 + 7 + 3 =$

$9 + 8 + 1 =$

$4 + 9 + 6 =$

5) $7 + 6 + 3 =$

$5 + 8 + 5 =$

$8 + 4 + 2 =$

$4 + 7 + 6 =$

$6 + 6 + 4 =$

2) $7 + 8 + 2 = 7 + 8 + \overset{10}{2} =$

$5 + 7 + 3 =$

$8 + 6 + 4 =$

$6 + 5 + 5 =$

$9 + 7 + 3 =$

6) $16 - 8 - 6 =$

$15 - 8 - 5 =$

$14 - 6 - 4 =$

$17 - 9 - 7 =$

$12 - 8 - 2 =$

3) $15 - 7 - 5 = 15 - \overset{10}{5} - 7 =$

$14 - 9 - 4 =$

$11 - 8 - 1 =$

$13 - 6 - 3 =$

7) $6 + 7 + 3 =$

$8 + 9 + 1 =$

$7 + 6 + 4 =$

$5 + 8 + 2 =$

4) $16 - 7 - 6 =$

$14 - 7 - 4 =$

$17 - 8 - 7 =$

$18 - 9 - 1 =$

8) $15 - 9 - 5 =$

$13 - 7 - 3 =$

$16 - 9 - 6 =$

$14 - 8 - 4 =$

(Nimi)

LIIDAN JA LAHUTAN 3-KAUPA:

(Kaupäev)

1) $0 + 3 =$

2) $1 + 3 =$

3) $2 + 3 =$

$3 + 3 =$

$4 + 3 =$

$5 + 3 =$

$6 + 3 =$

$=$

$=$

$=$

$=$

$=$

$=$

$=$

$=$

$=$

$=$

$=$

4) $20 - 3 =$

5) $19 - 3 =$

6) $18 - 3 =$

$17 - 3 =$

$16 - 3 =$

$15 - 3 =$

$14 - 3 =$

$=$

$=$

$=$

$=$

$=$

$=$

$=$

$=$

$=$

$=$

$=$

Kirjutun arvuread:

0 2 4 20

1 3 19

20 18 0

19 17

(Nimi)

LAHUTAN JA LIIDAN 4- JA 5-KAUPA:

(Kuupäev)

1) $4 + 4 =$

2) $1 + 4 =$

3) $2 + 4 =$

$8 + 4 =$

$5 + 4 =$

$6 + =$

$12 + =$

$9 + =$

$=$

$=$

$=$

$=$

4) $3 + 4 =$

5) $20 - 4 =$

6) $19 - 4 =$

$7 + =$

$16 - 4 =$

$15 - =$

$=$

$=$

$=$

$=$

$=$

$=$

7) $18 - 4 =$

8) $17 - 4 =$

9) $20 - 4 =$

$14 - =$

$13 - =$

$16 - 4 =$

$10 - =$

$=$

$=$

$=$

$=$

$=$

10) $1 + 5 =$

11) $2 + 5 =$

12) $3 + 5 =$

$6 + 5 =$

$7 + =$

$8 + =$

$=$

$=$

$=$

13) $19 - 5 =$

14) $18 - 5 =$

15) $17 - 5 =$

$14 - 5 =$

$13 - =$

$12 - =$

$=$

$=$

$=$

(Nimi)

LIIDAN JA LAHUTAN 6- JA 7-KAUPA.

(Kuupäev)

1) $6 + 6 =$

2) $2 + 6 =$

3) $4 + 6 =$

$12 + 6 =$

$8 + 6 =$

$10 + 6 =$

$1 + 6 =$

$14 + 6 =$

$5 + 6 =$

$7 + 6 =$

$3 + 6 =$

$11 + 6 =$

$\dots + 6 =$

$\dots + 6 =$

$6 + 6 =$

4) $20 - 6 =$

5) $13 - 6 =$

6) $17 - 6 =$

$14 - 6 =$

$\dots - 6 =$

$\dots - 6 =$

$\dots - 6 =$

$18 - 6 =$

$15 - 6 =$

$19 - 6 =$

$\dots - 6 =$

$\dots - 6 =$

7) $0 + 7 =$

8) $2 + 7 =$

9) $4 + 7 =$

$7 + 7 =$

$\dots + 7 =$

$\dots + 7 =$

$1 + 7 =$

$3 + 7 =$

$5 + 7 =$

$\dots + 7 =$

$\dots + 7 =$

$\dots + 7 =$

10) $20 - 7 =$

11) $18 - 7 =$

12) $16 - 7 =$

$13 - 7 =$

$\dots - 7 =$

$\dots - 7 =$

$19 - 7 =$

$17 - 7 =$

$15 - 7 =$

$\dots - 7 =$

$\dots - 7 =$

$14 - 7 =$

(Nimi)

PANEN PÄHKLID KAHTE HUNNIKUSSE.

(Kuupäev)

1) $11 = 10 + 1$

$11 = 9 +$

$11 = 6 +$

$11 = 3 +$

$11 = 7 +$

2) $11 = 8 +$

$11 = 4 +$

$11 = 6 +$

$11 = 2 +$

$11 = 5 +$

3) $12 = 10 +$

$12 = 9 +$

$12 = 6 +$

$12 = 8 +$

$12 = 5 +$

4) $12 = 3 +$

$12 = 7 +$

$12 = 4 +$

$13 = 10 +$

$13 = 9 +$

5) $13 = 6 +$

$13 = 8 +$

$13 = 7 +$

$13 = 4 +$

$13 = 5 +$

6) $14 = 10 +$

$14 = 8 +$

$14 = 6 +$

$14 = 9 +$

$14 = 7 +$

7) $15 = 10 +$

$15 = 7 +$

$15 = 9 +$

$15 = 6 +$

$15 = 8 +$

8) $16 = 10 +$

$16 = 8 +$

$16 = 9 +$

$16 = 7 +$

$16 = 6 +$

9) $17 = 10 +$

$17 = 8 +$

$17 = 9 +$

$18 = 10 +$

$18 = 9 +$

10) $11 = \dots + \dots$

$16 = \dots + \dots$

$13 = \dots + \dots$

11) $14 = \dots + \dots$

$12 = \dots + \dots$

$15 = \dots + \dots$

12) $17 = \dots + \dots$

$13 = \dots + \dots$

$16 = \dots + \dots$

(Nimi)

HARJUTUSEKS.

(Kuupäev)

Arvutan võimalikult hõlpsamal viisil:

$$\begin{array}{r}
 1) \quad \begin{array}{cccccc}
 1 & 4 & 4 & 6 & 7 & \\
 3 & 2 & 4 & 2 & 2 & \\
 9 & 6 & 3 & 4 & 3 & \\
 \hline & & & & &
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 2) \quad \begin{array}{cccccc}
 5 & 3 & 4 & 2 & 3 & \\
 6 & 8 & 9 & 2 & 7 & \\
 4 & 2 & 1 & 8 & 4 & \\
 \hline & & & & &
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 3) \quad \begin{array}{cccccc}
 8 & 9 & 1 & 2 & 3 & \\
 2 & 5 & 9 & 4 & 6 & \\
 4 & 3 & 9 & 8 & 4 & \\
 \hline & & & & &
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 4) \quad \begin{array}{cccccc}
 7 & 4 & 5 & 4 & 9 & \\
 5 & 8 & 7 & 2 & 6 & \\
 5 & 3 & 3 & 5 & 3 & \\
 \hline & & & & &
 \end{array}
 \end{array}$$

5) $18 - 5 - 8 =$

6) $16 - 7 - 4 =$

7) $3 + 8 - 6 =$

$17 - 4 - 8 =$

$13 - 6 - 5 =$

$5 + 9 - 7 =$

$15 - 8 - 2 =$

$15 - 9 - 3 =$

$12 - 4 + 9 =$

$18 - 9 - 3 =$

$11 - 2 - 8 =$

$17 - 6 + 5 =$

$12 - 4 - 6 =$

$14 - 6 - 7 =$

$4 + 9 - 6 =$

8) $18 - 9 + 5 =$

9) $8 + 6 - \dots = 7$

10) $14 - 9 + \dots = 11$

$12 - 6 + 8 =$

$13 - 4 + \dots = 14$

$7 + 4 - \dots = 8$

$13 - 8 + 5 =$

$9 + 3 - \dots = 5$

$12 - 6 + \dots = 13$

$15 - 7 + 2 =$

$15 - 12 - \dots = 2$

$9 + 9 - \dots = 7$

$8 - 6 + 14 =$

$8 + 7 + \dots = 19$

$17 - 4 - \dots = 0$

(Nimi)

HARJUTUSEKS.

(Kuupäev)

1) $\begin{array}{ccccc} 2 & 3 & 7 & 4 & 5 \\ 3 & 5 & 2 & 3 & 4 \\ 4 & 4 & 3 & 3 & 4 \\ \hline 3 & 2 & 5 & 3 & 5 \end{array}$	2) $\begin{array}{ccccc} 3 & 2 & 4 & 1 & 3 \\ 4 & 5 & 5 & 8 & 6 \\ 8 & 6 & 2 & 2 & 2 \\ \hline 2 & 6 & 1 & 3 & 5 \end{array}$
-------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------

3) $\begin{array}{ccccc} 8 & 2 & 3 & 5 & 4 \\ 3 & 5 & 3 & 6 & 5 \\ 3 & 4 & 4 & 2 & 1 \\ \hline 3 & 8 & 4 & 3 & 8 \end{array}$	4) $\begin{array}{ccccc} 2 & 9 & 3 & 6 & 7 \\ 3 & 4 & 5 & 5 & 4 \\ 4 & 2 & 5 & 3 & 4 \\ \hline 5 & 1 & 5 & 2 & 3 \end{array}$
-------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------

5) $14 - 2 - 3 - 5 =$

6) $20 - 12 - 4 + 7 =$

$16 - 3 - 4 - 2 =$

$18 - 11 - 5 + 9 =$

$15 - 6 - 4 - 4 =$

$16 - 5 - 10 + 12 =$

$18 - 7 - 3 - 2 =$

$19 - 1 - 12 + 7 =$

7) $3 + 12 - 6 =$

8) $3 + 15 - 9 =$

9) $8 - 3 + 9 =$

$4 + 11 - 8 =$

$6 + 11 - 8 =$

$7 + 8 - 6 =$

$18 - 9 + 2 =$

$17 - 6 - 4 =$

$11 - 4 + 8 =$

$17 - 8 + 5 =$

$13 - 7 + 8 =$

$4 + 9 - 5 =$

10) $6 + 11 - \dots = 9$

11) $9 + 5 - \dots = 7$

12) $6 + 5 - \dots = 3$

$12 - 8 + \dots = 13$

$2 + 15 - \dots = 8$

$8 + 7 - \dots = 9$

$4 + 12 - \dots = 8$

$13 - 8 + \dots = 11$

$17 - 4 - \dots = 4$

(Nimi)

RIIDEHOIU-NUMBRID.

(Kuupäev)

Kirjutun puuduvad numbrid omale kohale.

1, 2, 3,, 6, 7,, 9,,

11,, 13, 14,, 16, 17,, 19, 20,

21, 22,, 24, 25,, 27,, 30,

.....,,,,,,,,,,

....., 42, 43,,,, 47, 48,, 50.

50,, 48, 47,, 45,, 43,, 41,

.....,,,,,,,,,,

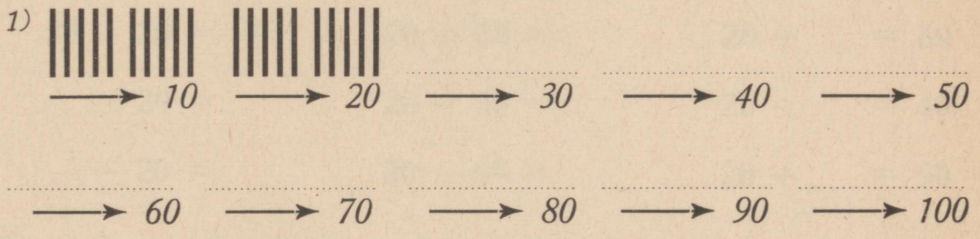
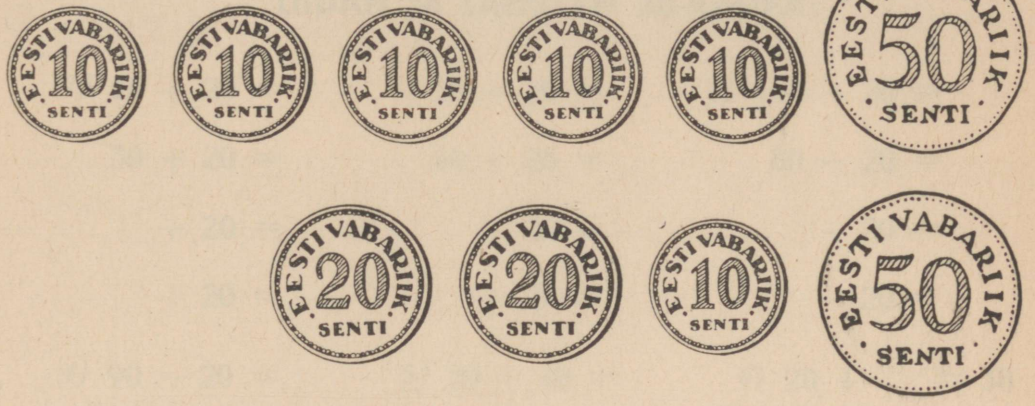
30, 29, 28,,,, 24, 23, 22, 21,

20,, 18, 17,,, 14,, 12,,

10, 9,,,,, 4, 3,, 1.

(Nimi)

(Kuupäev)



Liidan ja lahutan 10-kaupa:

- 2) $0 + 10 =$ 3) $50 + 10 =$ 4) $100 - 10 =$
 $10 + 10 =$ $+ 10 =$ $90 - 10 =$
 $20 + 10 =$ $+ 10 =$ $- 10 =$
 $30 + 10 =$ $+ 10 =$ $- 10 =$
..... $+ 10 =$ $+ 10 =$ $- 10 =$
- 5) $50 - 10 =$ 6) $10 + 40 =$ 7) $10 + \dots = 20$
 $40 - 10 =$ $10 + 20 =$ $10 + \dots = 70$
..... $- 10 =$ $10 + 70 =$ $10 + \dots = 50$
..... $- 10 =$ $10 + 30 =$ $10 + \dots = 100$

(Nimi)

LIIDAN JA LAHUTAN 20-KAUPA:

(Kuupäev)

1) $10 + 20 =$

2) $20 + 20 =$

3) $100 - 20 =$

$30 + 20 =$

$40 + 20 =$

$80 - 20 =$

$\dots + 20 =$

$\dots + 20 =$

$\dots - 20 =$

$\dots + 20 =$

$\dots + 20 =$

$\dots - 20 =$

4) $90 - 20 =$

5) $20 + 40 =$

6) $20 + \dots = 30$

$70 - 20 =$

$20 + 50 =$

$20 + \dots = 80$

$\dots - 20 =$

$20 + 30 =$

$20 + \dots = 40$

$\dots - 20 =$

$20 + 80 =$

$20 + \dots = 90$

7) $\begin{array}{r} 10 \\ 30 \\ \hline \end{array}$	$\begin{array}{r} 30 \\ 30 \\ \hline \end{array}$	$\begin{array}{r} 40 \\ 30 \\ \hline \end{array}$	$\begin{array}{r} 20 \\ 30 \\ \hline \end{array}$	8) $\begin{array}{r} 50 \\ 30 \\ \hline \end{array}$	$\begin{array}{r} 70 \\ 30 \\ \hline \end{array}$	$\begin{array}{r} 60 \\ 30 \\ \hline \end{array}$	$\begin{array}{r} 30 \\ 40 \\ \hline \end{array}$
------------------------------------------------------	---------------------------------------------------	---------------------------------------------------	---------------------------------------------------	------------------------------------------------------	---------------------------------------------------	---------------------------------------------------	---------------------------------------------------

9) $\begin{array}{r} 70 \\ -30 \\ \hline \end{array}$	$\begin{array}{r} 90 \\ -30 \\ \hline \end{array}$	$\begin{array}{r} 60 \\ -30 \\ \hline \end{array}$	$\begin{array}{r} 100 \\ -30 \\ \hline \end{array}$	10) $\begin{array}{r} 50 \\ -30 \\ \hline \end{array}$	$\begin{array}{r} 80 \\ -30 \\ \hline \end{array}$	$\begin{array}{r} 40 \\ -30 \\ \hline \end{array}$	$\begin{array}{r} 30 \\ -30 \\ \hline \end{array}$
-------------------------------------------------------	----------------------------------------------------	----------------------------------------------------	-----------------------------------------------------	--------------------------------------------------------	----------------------------------------------------	----------------------------------------------------	----------------------------------------------------

11) $\begin{array}{r} 30 \\ \hline 80 \end{array}$	$\begin{array}{r} 30 \\ \hline 40 \end{array}$	$\begin{array}{r} 30 \\ \hline 50 \end{array}$	$\begin{array}{r} 30 \\ \hline 70 \end{array}$	12) $\begin{array}{r} \\ \hline 30 \end{array}$	$\begin{array}{r} 100 \\ \hline 30 \end{array}$	$\begin{array}{r} 70 \\ \hline 30 \end{array}$	$\begin{array}{r} 90 \\ \hline 30 \end{array}$
----------------------------------------------------	------------------------------------------------	------------------------------------------------	------------------------------------------------	-------------------------------------------------------------	-------------------------------------------------	------------------------------------------------	------------------------------------------------

Kirjutan arvuread:

0, 20, 40 100, 80, 0

10, 30, 90, 70,

(Nimi)

(Mida arvutan)

(Kuupäev)

1) $10 + 40 =$	2) $10 + 50 =$	3) $10 + 60 =$
$30 + 40 =$	$50 + 50 =$	$30 + 60 =$
$50 + 40 =$	$30 + 50 =$	$20 + 60 =$
$20 + 40 =$	$20 + 50 =$	$40 + 60 =$
$60 + 40 =$	$40 + 50 =$	$10 + 70 =$

4) $20 + 70 =$	5) $40 + \dots = 60$	6) $\dots + 50 = 70$
$30 + 70 =$	$50 + \dots = 80$	$\dots + 40 = 80$
$10 + 80 =$	$30 + \dots = 70$	$\dots + 60 = 80$
$10 + 90 =$	$60 + \dots = 90$	$\dots + 80 = 90$
$20 + 80 =$	$70 + \dots = 80$	$\dots + 70 = 100$

7) $\begin{array}{r} 80 \\ -40 \\ \hline \end{array}$	$\begin{array}{r} 70 \\ -40 \\ \hline \end{array}$	$\begin{array}{r} 90 \\ -40 \\ \hline \end{array}$	$\begin{array}{r} 100 \\ -40 \\ \hline \end{array}$	8) $\begin{array}{r} 60 \\ -40 \\ \hline \end{array}$	$\begin{array}{r} 50 \\ -40 \\ \hline \end{array}$	$\begin{array}{r} 90 \\ -50 \\ \hline \end{array}$	$\begin{array}{r} 70 \\ -50 \\ \hline \end{array}$
-------------------------------------------------------	----------------------------------------------------	----------------------------------------------------	-----------------------------------------------------	-------------------------------------------------------	----------------------------------------------------	----------------------------------------------------	----------------------------------------------------

9) $\begin{array}{r} 60 \\ -50 \\ \hline \end{array}$	$\begin{array}{r} 100 \\ -50 \\ \hline \end{array}$	$\begin{array}{r} 80 \\ -50 \\ \hline \end{array}$	$\begin{array}{r} 80 \\ -30 \\ \hline \end{array}$	10) $\begin{array}{r} 70 \\ -60 \\ \hline \end{array}$	$\begin{array}{r} 80 \\ -60 \\ \hline \end{array}$	$\begin{array}{r} 90 \\ -70 \\ \hline \end{array}$	$\begin{array}{r} 100 \\ -80 \\ \hline \end{array}$
-------------------------------------------------------	-----------------------------------------------------	----------------------------------------------------	----------------------------------------------------	--------------------------------------------------------	----------------------------------------------------	----------------------------------------------------	-----------------------------------------------------

11) $\begin{array}{r} 80 \\ \hline 30 \end{array}$	$\begin{array}{r} 70 \\ \hline 10 \end{array}$	$\begin{array}{r} 90 \\ \hline 40 \end{array}$	$\begin{array}{r} 100 \\ \hline 20 \end{array}$	12) $\begin{array}{r} 80 \\ \hline 10 \end{array}$	$\begin{array}{r} 100 \\ \hline 30 \end{array}$	$\begin{array}{r} 90 \\ \hline 30 \end{array}$	$\begin{array}{r} 70 \\ \hline 30 \end{array}$
----------------------------------------------------	------------------------------------------------	------------------------------------------------	-------------------------------------------------	----------------------------------------------------	-------------------------------------------------	------------------------------------------------	------------------------------------------------