

$$\begin{array}{r} \underline{1.} \quad a.) \quad 23'097 \\ + 18'655 \\ \hline 41'752 \\ \hline \hline \end{array}$$

$$\begin{array}{r} b.) \quad 16'009 \\ - \quad 786 \\ \hline - \quad 3'481 \\ \hline 11'742 \\ \hline \hline \end{array}$$

$$\begin{array}{r} c.) \quad 274 \cdot 693 \\ \hline 1644 \\ 2466 \\ 1822 \\ \hline 189'882 \\ \hline \hline \end{array}$$

$$\begin{array}{r} d.) \quad \overline{40'092} : 78 = \underline{\underline{514}} \\ 109 \\ 312 \\ 0 \end{array}$$

2. Das Produkt ist möglichst groß, wenn die beiden natürlichen Zahlen so nahe wie möglich beieinander liegen.

$$\Rightarrow \underline{\underline{22 + 23 = 45}}$$

$$\rightsquigarrow \begin{array}{r} \underline{\underline{22 \cdot 23}} \\ 44 \\ 166 \\ \hline 506 \\ \hline \hline \end{array}$$

3. Ausprobieren:

$$28 \cdot 10 = 280$$

$$38 \cdot 20 = 760$$

$$\underline{\underline{39 \cdot 21}}$$

$$78$$

$$39$$

$$1$$

$$\underline{\underline{819}}$$

Die beiden Zahlen heißen 39 und 21.

4.

Ausprobieren:

$$10 \cdot 10 = 100$$

$$50 \cdot 50 = 2'500$$

$$100 \cdot 100 = 10'000$$

$$99 \cdot 99 = \underline{\underline{9'801}}$$

Quadratzahlen

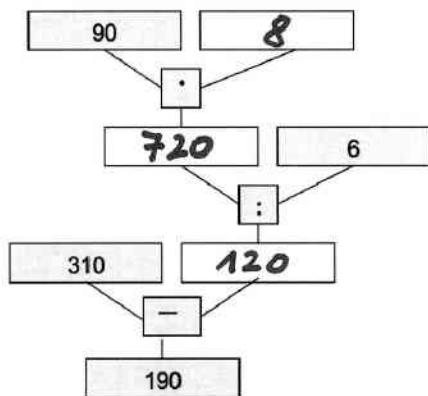
5.

Quersumme: Summe aller Ziffern einer Zahl.

$$\Rightarrow \underline{\underline{960}}$$

$$(9 + 6 + 0 = 15)$$

6.



7.

a.) $\sim 10'035$

b.) $\sim 2'905'900$

c.) $\sim 0,050$

d.) $\sim 3,0$

e.) $\sim 4'000,00$

f.) $\sim 9,519 \text{ L}$

g.) $\sim 68,00 \text{ m}$

h.) $\sim 0,385 \text{ kg}$

i.) $\sim 0,36 \text{ Fr.}$

j.) $\sim 80,81 \text{ dm}$

8.

Teiler: 1; 2; 3; 4; 7; 12; 21; 28; 42; 84.

9. Teiler von 40 : 1; 2; 4; 5; 8; 10; 20; 40.

Teiler von 48 : 1; 2; 3; 4; 6; 8; 12; 16; 24; 48.

⇒ Teiler von 40 und 48 : 1; 2; 4; 8.

10. a.) Primzahlen haben nur 1 und sich selber als Teiler.

$$\begin{aligned}462 &= 2 \cdot 231 \\ &= 2 \cdot 3 \cdot 77 \\ &= \underline{\underline{2 \cdot 3 \cdot 7 \cdot 11}}\end{aligned}$$

$$\begin{aligned}\text{b.) } 975 &= 3 \cdot 325 \\ &= 3 \cdot 5 \cdot 65 \\ &= \underline{\underline{3 \cdot 5 \cdot 5 \cdot 13}}\end{aligned}$$

$$\begin{aligned}\text{c.) } 1'428 &= 2 \cdot 714 \\ &= 2 \cdot 2 \cdot 357 \\ &= 2 \cdot 2 \cdot 3 \cdot 119 \\ &= \underline{\underline{2 \cdot 2 \cdot 3 \cdot 7 \cdot 17}}\end{aligned}$$

11. 53; 59; 61; 67.

12. $2 \cdot 3 \cdot 5 = \underline{30} \Rightarrow$ Zahlen in der 30-er-Reihe

↪ 30, 60.

13. a.) ggT: grösster gemeinsamer Teiler

$$126 = \textcircled{2} \cdot \textcircled{3} \cdot 3 \cdot \textcircled{7} \quad (\text{'Primfaktorzerlegung'})$$

$$84 = \textcircled{2} \cdot 2 \cdot \textcircled{3} \cdot \textcircled{7}$$

$$\Rightarrow \text{ggT} = \textcircled{2} \cdot \textcircled{3} \cdot \textcircled{7} = \underline{\underline{42}}.$$

b.) $420 = \textcircled{2} \cdot 2 \cdot \textcircled{3} \cdot 5 \cdot \textcircled{7}$

$$882 = \textcircled{2} \cdot \textcircled{3} \cdot 3 \cdot \textcircled{7} \cdot 7$$

$$\Rightarrow \text{ggT} = \textcircled{2} \cdot \textcircled{3} \cdot \textcircled{7} = \underline{\underline{42}}.$$

14. a.) kgV: kleinstes gemeinsames Vielfaches

$$42 = 2 \cdot \boxed{3} \cdot \boxed{7}$$

$$140 = \boxed{2 \cdot 2} \cdot \boxed{5} \cdot 7$$

$$\Rightarrow \text{kgV} = \boxed{2 \cdot 2} \cdot \boxed{3} \cdot \boxed{5} \cdot \boxed{7} = \underline{\underline{420}}.$$

b.) $110 = \boxed{2} \cdot \boxed{5} \cdot \boxed{11}$

$$315 = \boxed{3 \cdot 3} \cdot 5 \cdot \boxed{7}$$

$$\Rightarrow \text{kgV} = \boxed{2} \cdot \boxed{3 \cdot 3} \cdot \boxed{5} \cdot \boxed{7} \cdot \boxed{11} = \underline{\underline{6'930}}.$$

15. a.) $\text{kgV}(20; 15; 12) = 2 \cdot 2 \cdot 3 \cdot 5 = \underline{\underline{60}}$

$$20 = 2 \cdot 2 \cdot 5$$

$$15 = \boxed{3} \cdot \boxed{5}$$

$$12 = \boxed{2 \cdot 2} \cdot 3$$

\Rightarrow kleinste Kartenlänge: 60 cm.

$$\begin{aligned}
 \text{b.) } 60 \text{ cm} : 20 \text{ cm} &= \underline{3 \times} \\
 60 \text{ cm} : 15 \text{ cm} &= \underline{4 \times} \\
 60 \text{ cm} : 12 \text{ cm} &= \underline{5 \times} \\
 \Rightarrow 3 \cdot 4 \cdot 5 &= \underline{\underline{60}} .
 \end{aligned}$$

$$\begin{aligned}
 \underline{16.} \quad \text{a.) } 131 - (50 - 18) + 21 &= \\
 131 - 32 + 21 &= \underline{\underline{120}} .
 \end{aligned}$$

$$\begin{aligned}
 \text{b.) } 5 \cdot (45 : 5) + 7 &= 5 \cdot 9 + 7 = \\
 45 + 7 &= \underline{\underline{52}} .
 \end{aligned}$$

$$\begin{aligned}
 \text{c.) } 140 : (2 \cdot 7) - 7 &= 140 : 14 - 7 = \\
 10 - 7 &= \underline{\underline{3}} .
 \end{aligned}$$

$$\begin{aligned}
 \text{d.) } (45 + (24 - 6) : 3) \cdot 2 &= \\
 (45 + 18 : 3) \cdot 2 &= (45 + 6) \cdot 2 = \\
 51 \cdot 2 &= \underline{\underline{102}} .
 \end{aligned}$$

$$\begin{aligned}
 \text{e.) } 250 - (17 + (26 : 2)) \cdot 3 &= \\
 250 - (17 + 13) \cdot 3 &= \\
 250 - 30 \cdot 3 &= 250 - 90 = \underline{\underline{160}} .
 \end{aligned}$$

$$\begin{aligned}
 \text{f.) } 100 : 50 \cdot 2 + 100 : 2 &= \\
 2 \cdot 2 + 50 &= 4 + 50 = \underline{\underline{54}} .
 \end{aligned}$$

17. a.) 700'000 g b.) 0,00005 kg
c.) 0,011 t d.) 540 g

18. a.) 7 dm b.) 0,2 cm
c.) 0,00012 km d.) 508 mm

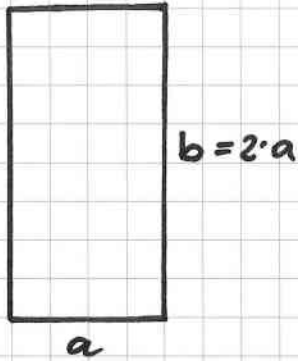
19. a.) 0,001287 g b.) 185'000 m²
c.) 0,0000000002 km² d.) 504'300'000'000 mm²
e.) 5 · 10⁹ dm² f.) 8'000'800 m²
g.) 0,002465 dm² h.) 0,0000000006 ha

20.

	a	b	A	u
a.)	15 dm	45 dm	675 dm ²	12m/120 dm
b.)	4m	15m	0,6 a/60m ²	38 m
c.)	2m/20dm	2dm	40 dm ²	44 dm
d.)	100 dm	0,2 dm	0,2 m ² /20dm ²	200,4 dm

21. $u = 4 \cdot s$ $\rightarrow s = u : 4$
 $= 64 \text{ cm} : 4 = \underline{16 \text{ cm}}$
 $\Rightarrow A = s^2 = (16 \text{ cm})^2 = \underline{\underline{256 \text{ cm}^2}}$

22.



$$\begin{aligned}
 u &= 2 \cdot (a + b) \\
 &= 2 \cdot (a + 2 \cdot a) \\
 &= 2 \cdot 3 \cdot a \\
 &= \underline{6 \cdot a} &= 240 \text{ cm}
 \end{aligned}$$

$$\begin{aligned}
 \rightarrow a &= 40 \text{ cm} \\
 \underline{\underline{b}} &= \underline{\underline{80 \text{ cm}}}
 \end{aligned}$$

$$\begin{aligned}
 \Rightarrow A &= a \cdot b \\
 &= 40 \text{ cm} \cdot 80 \text{ cm} = \underline{\underline{3'200 \text{ cm}^2}}
 \end{aligned}$$

23.



$$\begin{aligned}
 \text{"Quadrat": } A &= 1,5 \text{ m}^2 : 6 \\
 &= 0,25 \text{ m}^2 = \underline{\underline{25 \text{ dm}^2}}
 \end{aligned}$$

$$\rightarrow \textcircled{5} = \underline{\underline{5 \text{ dm}}}$$

$$\begin{aligned}
 \rightarrow a &= \underline{\underline{5 \text{ dm}}} \\
 b &= \underline{\underline{30 \text{ dm}}}
 \end{aligned}$$

$$\Rightarrow u = 2 \cdot (a + b) = 2 \cdot (5 \text{ dm} + 30 \text{ dm}) = \underline{\underline{70 \text{ dm}}}$$

24.

a.) $4'000'000 \text{ cm}^3$

b.) $800'000'000 \text{ dm}^3$

c.) $0,0055 \text{ m}^3$

d.) $1'125 \text{ mm}^3$

e.) $1,05 \text{ hl}$

f.) $2'500 \text{ l}$

g.) 50 cm^3

h.) $0,018 \text{ m}^3$

25.

$$V = a \cdot b \cdot c = 200 \text{ cm} \cdot 20 \text{ cm} \cdot 2 \text{ cm} \\ = \underline{\underline{8'000 \text{ cm}^3}} = \underline{\underline{8 \text{ dm}^3}}$$

$$O = 2 \cdot (a \cdot b + a \cdot c + b \cdot c) \\ = 2 \cdot (200 \text{ cm} \cdot 20 \text{ cm} + 200 \text{ cm} \cdot 2 \text{ cm} + 20 \text{ cm} \cdot 2 \text{ cm}) \\ = 2 \cdot (4'000 \text{ cm}^2 + 400 \text{ cm}^2 + 40 \text{ cm}^2) \\ = 2 \cdot 4'440 \text{ cm}^2 = \underline{\underline{8'880 \text{ cm}^2}} = \underline{\underline{88,8 \text{ dm}^2}}$$

$$K = 4 \cdot (a + b + c) = 4 \cdot (200 \text{ cm} + 20 \text{ cm} + 2 \text{ cm}) \\ = 4 \cdot 222 \text{ cm} = \underline{\underline{888 \text{ cm}}}$$

26.

a.) $V_1 = s \cdot s \cdot s = \underline{s^3}$

$$V_2 = (4 \cdot s) \cdot (4 \cdot s) \cdot (4 \cdot s) = 4 \cdot 4 \cdot 4 \cdot s \cdot s \cdot s = \underline{\underline{64 \cdot s^3}}$$

$\Rightarrow V_2$ ist 64x größer als V_1 .

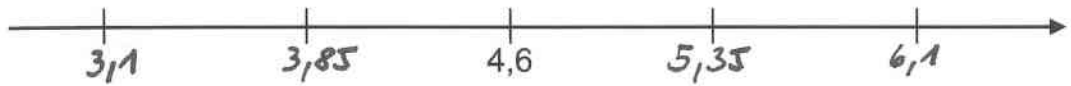
b.) $O_1 = \underline{6 \cdot s^2}$

$$O_2 = 6 \cdot (4 \cdot s)^2 = 6 \cdot 16 \cdot s^2 = \underline{\underline{96 \cdot s^2}}$$

$$\leadsto 96s^2 : 6s^2 = \underline{\underline{16x}}$$

$\Rightarrow O_2$ ist 16x größer als O_1 .

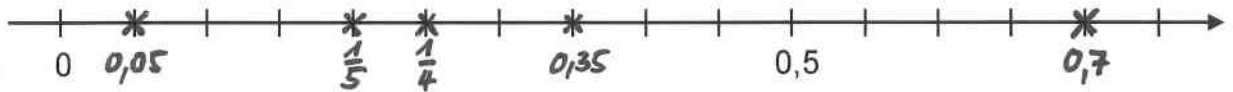
27.



28.



29.



30.

M	HT	ZT	T	H	Z	E	z	h	t	zt	ht	m	
Millionen	Hundert-tausender	Zehn-tausender	Tausender	Hunderter	Zehner	Einer	zehntel	hundertstel	tausendstel	zehn-tausendstel	hundert-tausendstel	millionstel	
1	0	0	8	7	0	1	,	5	0	7			= 1'008'701,507
.			,			=
		8	0	0	9	0	,	0	1	1			= 80'090,011
			,	.	.				=
		4	9	0	7	2	,	0	0	2	0	5	= 49'072,008005
		,			=
	7	0	0	1	0	0	,	5	0	0	6		= 700'100,5006
			,			=
							,	3	0	9	8	6	= 0,30986
							,	=
	7	0	7	4	9	8	,	0	2	0	0	6	= 707'498,02006
	,		=

31.

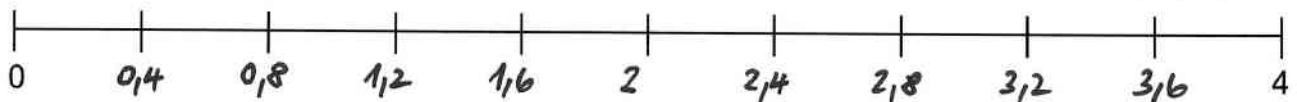
$$\begin{array}{r} a.) \quad 12,960 \\ + \quad 1,91074 \\ \hline 22,034 \\ \hline \hline \end{array}$$

$$\begin{array}{r} b.) \quad 12,100 \\ - \quad 4,076 \\ \hline 8,024 \\ \hline \hline \end{array}$$

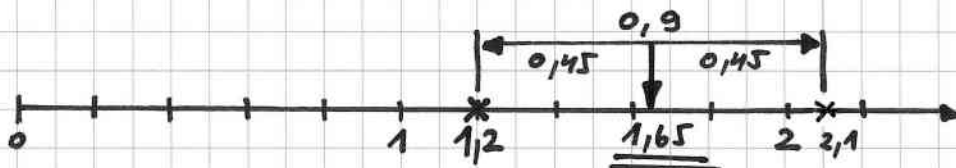
$$\begin{array}{r} c.) \quad 2,86 \cdot 5,7 \\ \hline 1430 \\ 2002 \\ \hline 16,302 \\ \hline \hline \end{array}$$

$$\begin{array}{r} d.) \quad 1,32 : 0,006 = \\ \hline 1'320 : 6 = 220 \\ \hline 12 \\ 00 \end{array}$$

32.



33.



$$(1,2 + 2,1) : 2 = 3,3 : 2 = \underline{\underline{1,65}}$$

34. $\underline{\underline{\frac{3}{5} ; \frac{3}{4} ; \frac{2}{3} > \frac{1}{2}}}}$

35. a.) $\frac{2}{7} + \frac{2}{7} = \underline{\underline{\frac{5}{7}}}$ b.) $\frac{3}{8} + \frac{1}{8} = \frac{4}{8} = \underline{\underline{\frac{1}{2}}}$

c.) $\frac{1}{6} + \frac{1}{4} = \frac{2}{12} + \frac{3}{12} = \underline{\underline{\frac{5}{12}}}$

d.) $\frac{3}{5} + \frac{1}{3} = \frac{9}{15} + \frac{5}{15} = \underline{\underline{\frac{14}{15}}}$

$$e.) \quad \frac{5}{8} + \frac{1}{6} = \frac{15}{24} + \frac{4}{24} = \underline{\underline{\frac{19}{24}}}$$

$$f.) \quad \frac{7}{12} - \frac{3}{8} = \frac{14}{24} - \frac{9}{24} = \underline{\underline{\frac{5}{24}}}$$

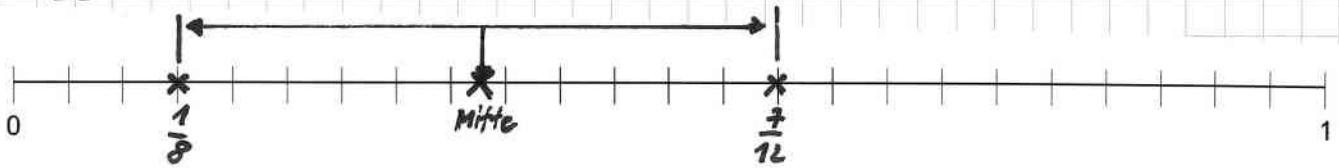
$$g.) \quad \frac{8}{15} - \frac{3}{10} = \frac{16}{30} - \frac{9}{30} = \underline{\underline{\frac{7}{30}}}$$

$$h.) \quad \frac{1}{9} - \frac{1}{12} = \frac{4}{36} - \frac{3}{36} = \underline{\underline{\frac{1}{36}}}$$

36. $\frac{3}{4} = \frac{18}{24}, \frac{5}{6} = \frac{20}{24}, \frac{1}{2} = \frac{12}{24}, \frac{7}{8} = \frac{21}{24}, \frac{5}{12} = \frac{10}{24}, \frac{2}{3} = \frac{16}{24}$

$$\Rightarrow \underline{\underline{\frac{5}{12} < \frac{1}{2} < \frac{2}{3} < \frac{3}{4} < \frac{5}{6} < \frac{7}{8}}}$$

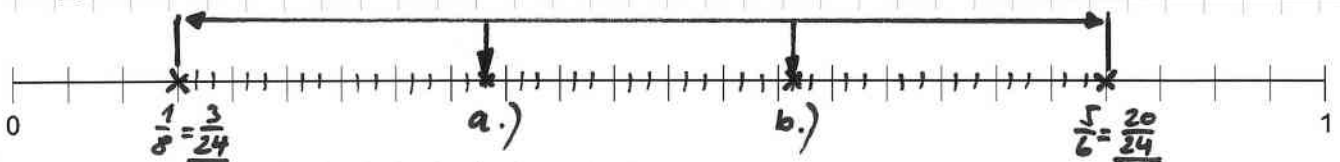
37.



$$\frac{1}{8} = \frac{3}{24} \quad , \quad \frac{7}{12} = \frac{14}{24}$$

$$\begin{aligned} \Rightarrow \left(\frac{1}{8} + \frac{7}{12} \right) : 2 &= \left(\frac{3}{24} + \frac{14}{24} \right) : 2 \\ &= \frac{17}{24} : 2 = \underline{\underline{\frac{17}{48}}} \end{aligned}$$

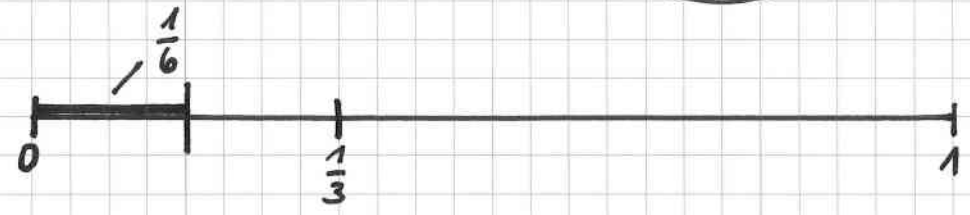
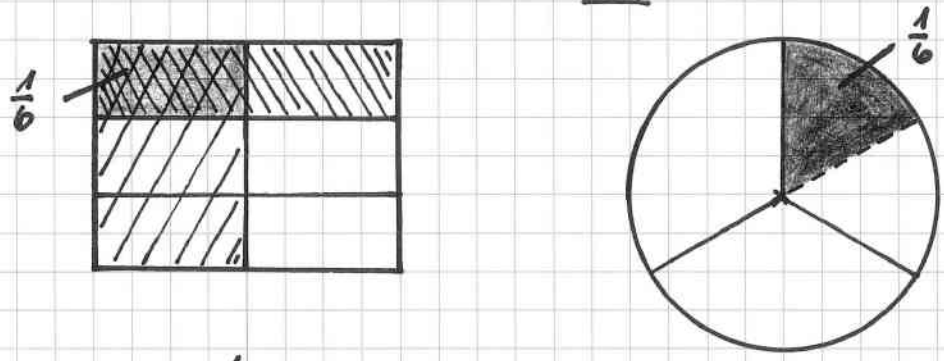
38.



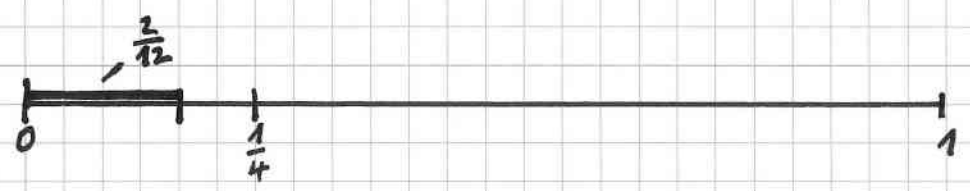
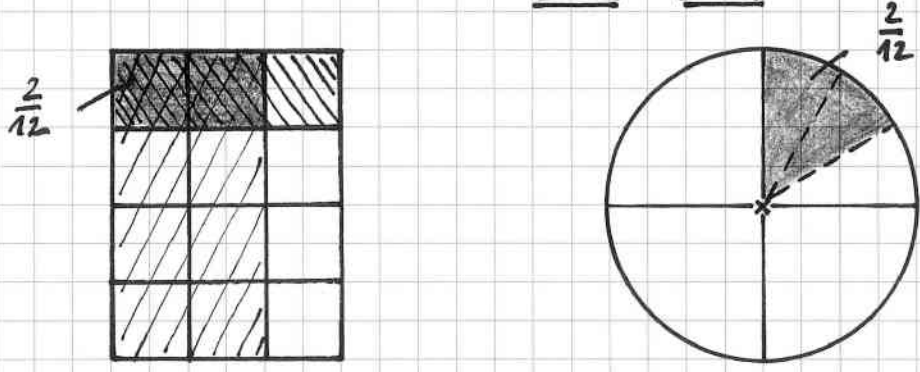
$$a.) = \frac{1}{8} + \frac{17}{72} = \frac{9}{72} + \frac{17}{72} = \frac{26}{72} = \underline{\underline{\frac{13}{36}}}$$

$$b.) = \frac{5}{6} - \frac{17}{72} = \frac{60}{72} - \frac{17}{72} = \underline{\underline{\frac{43}{72}}}$$

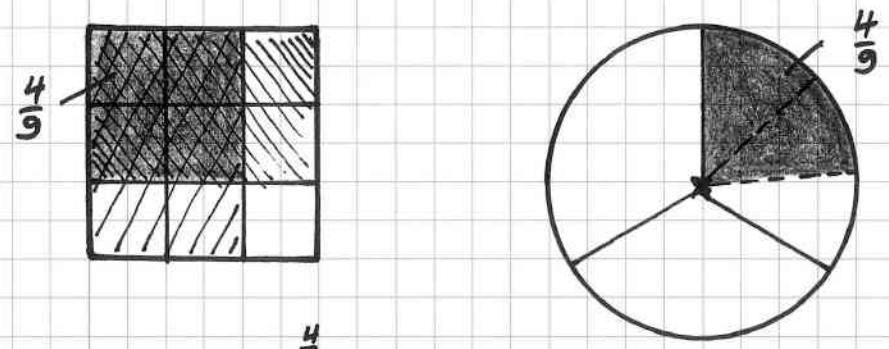
39. a.) $\frac{1}{2}$ von $\frac{1}{3} = \frac{1}{2} \cdot \frac{1}{3} = \underline{\underline{\frac{1}{6}}}$



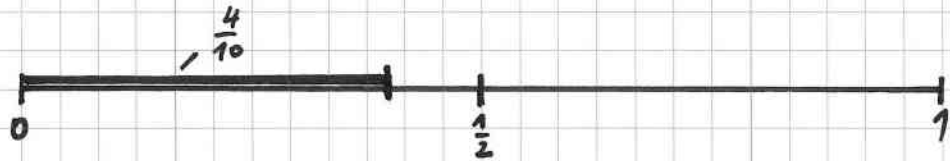
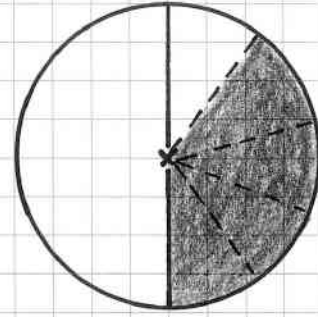
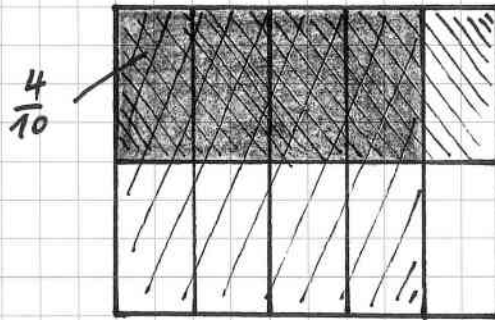
b.) $\frac{2}{3}$ von $\frac{1}{4} = \frac{2}{3} \cdot \frac{1}{4} = \underline{\underline{\frac{2}{12}}} = \underline{\underline{\frac{1}{6}}}$



c.) $\frac{2}{3}$ von $\frac{2}{3} = \frac{2}{3} \cdot \frac{2}{3} = \underline{\underline{\frac{4}{9}}}$



$$d.) \frac{4}{5} \text{ von } \frac{1}{2} = \frac{4}{5} \cdot \frac{1}{2} = \frac{4}{10} = \frac{2}{5}$$



$$\underline{40.} \quad a.) \frac{1}{3} \cdot \frac{3}{4} = \frac{1 \cdot 3}{12_4} = \frac{1}{4}$$

$$b.) \frac{5}{6} \cdot \frac{4}{5} = \frac{2 \cdot 20}{30_3} = \frac{2}{3}$$

$$c.) \frac{3}{4} \cdot \frac{2}{9} = \frac{1 \cdot 6}{36_6} = \frac{1}{6}$$

$$d.) \frac{5}{8} \cdot \frac{4}{15} = \frac{1 \cdot 20}{120_6} = \frac{1}{6}$$

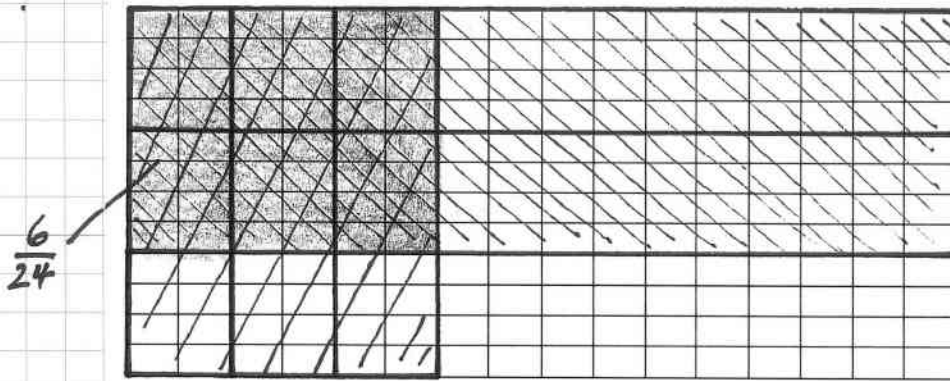
$$\underline{41.} \quad \frac{1}{6} \cdot \frac{8}{15} = \frac{4 \cdot 8}{90_{45}} = \frac{4}{45}$$

$$\underline{42.} \quad \frac{2}{5} \cdot 20 = \underline{8} \quad \rightarrow \text{Rest: } 20 - 8 = \underline{12}$$

$$\frac{2}{3} \cdot 12 = \underline{8} \quad \rightarrow \text{Rest: } 12 - 8 = \underline{4}$$

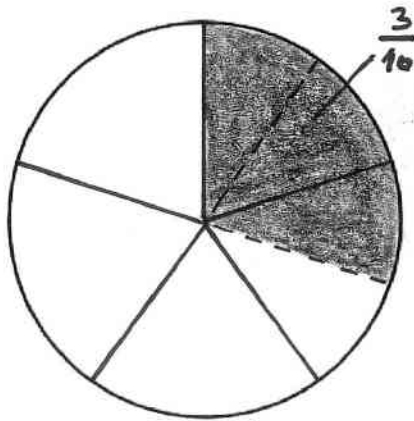
$$\Rightarrow 4 \text{ von } 20 : \frac{1 \cdot 4}{20_5} = \frac{1}{5}$$

43.



$$\frac{2}{3} \text{ von } \frac{3}{8} = \frac{2}{3} \cdot \frac{3}{8} = \underline{\underline{\frac{6}{24}}} = \underline{\underline{\frac{1}{4}}}$$

44.



$$\frac{3}{4} \text{ von } \frac{2}{5} = \frac{3}{4} \cdot \frac{2}{5} = \underline{\underline{\frac{6}{20}}} = \underline{\underline{\frac{3}{10}}}$$

45.



$$\frac{2}{3} \text{ von } \frac{9}{10} = \frac{2}{3} \cdot \frac{9}{10} = \underline{\underline{\frac{18}{30}}} = \underline{\underline{\frac{3}{5}}}$$

46.

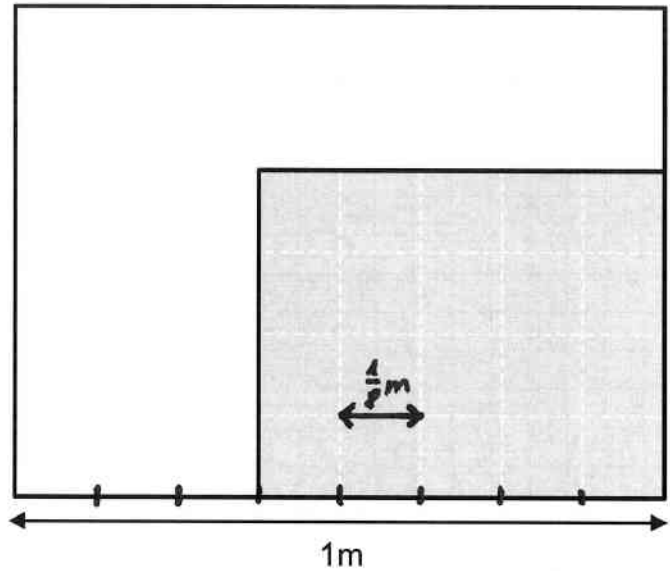
$$a.) A = \frac{5}{8} \text{ m} \cdot \frac{4}{8} \text{ m}$$

$$= \frac{5 \cdot 4}{64} \text{ m}^2$$

$$= \frac{5}{16} \text{ m}^2$$

$$b.) A = 0,125 \text{ m} \cdot 0,5 \text{ m}$$

$$= \underline{\underline{0,0625 \text{ m}^2}}$$



$$c.) A = 0,0625 \text{ m}^2 = 6,25 \text{ dm}^2 = 625 \text{ cm}^2 = \underline{\underline{62'500 \text{ mm}^2}}$$

47.

$$a.) \frac{1}{2} \frac{1}{8} \text{ m} \cdot \frac{1}{15} \text{ m} = \underline{\underline{\frac{1}{6} \text{ m}^2}}$$

$$b.) 3 \frac{3}{5} \text{ cm} \cdot \frac{10}{1} \text{ cm} = \frac{18}{5} \text{ cm} \cdot \frac{10}{1} \text{ cm} = \underline{\underline{36 \text{ cm}^2}}$$

$$c.) \frac{11}{42} \text{ dm} \cdot \frac{14}{25} \text{ dm} = \underline{\underline{\frac{11}{15} \text{ dm}^2}}$$

$$d.) \frac{12}{1} \text{ mm} \cdot 1 \frac{2}{9} \text{ mm} = \frac{12}{1} \text{ mm} \cdot \frac{11}{9} \text{ mm} = \underline{\underline{22 \text{ mm}^2}}$$

$$e.) \frac{27}{56} \text{ m} \cdot \frac{5}{81} \text{ m} = \underline{\underline{\frac{5}{21} \text{ m}^2}}$$

$$f.) 4 \frac{2}{3} \text{ dm} \cdot 2 \frac{1}{4} \text{ dm} = \frac{14}{3} \text{ dm} \cdot \frac{9}{2} \text{ dm} = \underline{\underline{\frac{21}{2} \text{ dm}^2}}$$

48.

$$\frac{3}{8} \cdot \frac{1}{8} = \underline{\underline{\frac{3}{8}}}$$

$$\rightarrow 1 - \frac{3}{8} - \frac{2}{8} = \frac{8}{8} - \frac{6}{8} = \frac{2}{8} = \underline{\underline{\frac{1}{4}}}$$

49. $\frac{1}{6} \cdot \frac{2}{10} = \frac{2}{3} \cdot x$

$\frac{1}{4} = \frac{2}{3} \cdot x \quad \rightarrow \quad x = \frac{1}{4} : \frac{2}{3}$

$= \frac{1}{4} \cdot \frac{3}{2} = \underline{\underline{\frac{3}{8}}}$

50. $A_1 = (0,5 \text{ dm})^2 = \underline{0,25 \text{ dm}^2}$

$A_2 = (10 \text{ dm})^2 = \underline{100 \text{ dm}^2}$

$\Rightarrow A_2 : A_1 = 100 \text{ dm}^2 : 0,25 \text{ dm}^2 = \underline{\underline{400 \times}}$

51. a.) $5 \text{ ha} \cdot 0,03 = 0,15 \text{ ha} = \underline{\underline{15 \text{ a}}}$

b.) $28 \text{ m} \cdot 0,4 = 11,2 \text{ m} = \underline{\underline{112 \text{ dm}}}$

c.) $0,2 \text{ t} \cdot 0,75 = 0,15 \text{ t} = \underline{\underline{150 \text{ kg}}}$

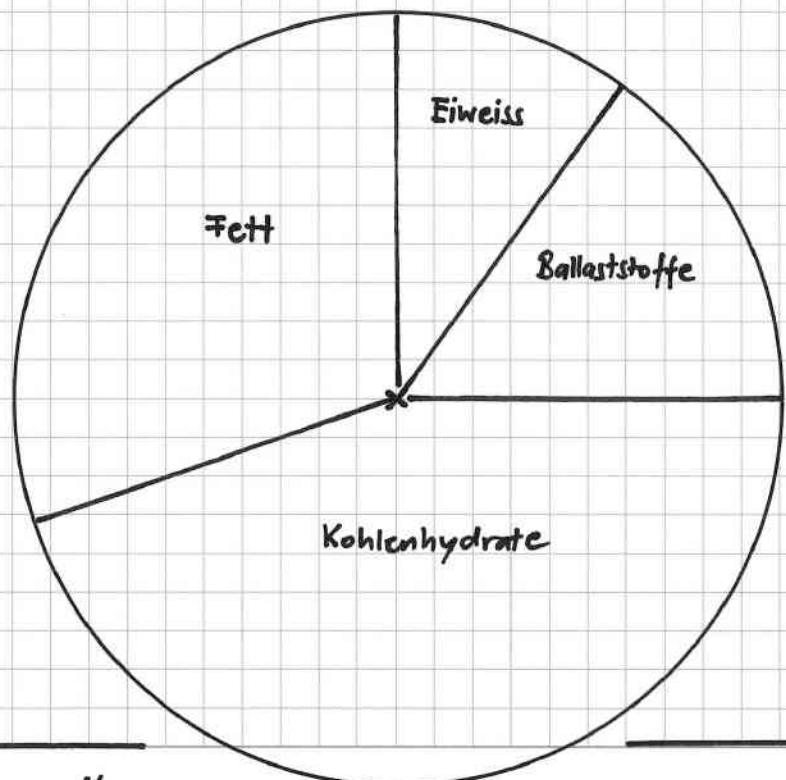
d.) $0,6 \text{ dl} \cdot 1,5 = 0,9 \text{ dl} = \underline{\underline{9 \text{ cl}}}$

e.) $5 \text{ Fr.} \cdot 0,18 = 0,9 \text{ Fr.} = \underline{\underline{90 \text{ Rp.}}}$

f.) $6 \text{ min.} \cdot 0,6 = 0,36 \text{ min.} = \underline{\underline{21,6 \text{ s}}}$

52.

Gramm	%	Winkel, °
9	45	162
6	30	108
2	10	36
3	15	54
20	100	360



53. $\frac{8}{25} = 8 : 25 = 0,32 = \underline{\underline{32\%}}$

54.

a.) $36\% = \frac{9}{25} = 0,36$

f.) $8,3\% = \frac{1}{12} = 0,08\bar{3}$

b.) $2\% = \frac{1}{50} = 0,02$

g.) $48\% = \frac{12}{25} = 0,48$

c.) $66,6\% = \frac{2}{3} = 0,\bar{6}$

h.) $55,5\% = \frac{9}{16} = 0,5\bar{6}$

d.) $60\% = \frac{3}{5} = 0,6$

i.) $72\% = \frac{18}{25} = 0,72$

e.) $62,5\% = \frac{5}{8} = 0,625$

55. $3,50 \text{ Fr.} \hat{=} 100\%$

$2,80 \text{ Fr.} \hat{=} \underline{\underline{80\%}}$

$\Rightarrow 100\% - 80\% = \underline{\underline{20\%}}$

56. $\begin{array}{l} 630 \text{ g} \hat{=} 35\% \\ 90 \text{ g} \hat{=} 5\% \\ \underline{\underline{1'800 \text{ g}}} \hat{=} 100\% \end{array} \begin{array}{l} \left. \begin{array}{l} :7 \\ :7 \end{array} \right\} \\ \left. \begin{array}{l} :20 \\ :20 \end{array} \right\} \end{array}$

57. a.) $\frac{3}{8} = 3 : 8 = \underline{\underline{0,375}}$

b.) $\frac{4}{15} = 4 : 15 = \underline{\underline{0,2\bar{6}}}$

c.) $\frac{8}{25} = 8 : 25 = \underline{\underline{0,32}}$

d.) $\frac{1}{27} = 1 : 27 = \underline{\underline{0,03\bar{7}}}$

58.

a.) $\frac{12}{15} = \frac{4}{5}$ b.) $\frac{4}{7} = \frac{20}{35}$ c.) $\frac{18}{5} = \frac{90}{25}$ d.) $\frac{30}{72} = \frac{5}{12}$

59.

$108 = 2 \cdot 2 \cdot 3 \cdot 3 \cdot 3$
 $504 = 2 \cdot 2 \cdot 2 \cdot 3 \cdot 3 \cdot 7$ } $\text{ggT} = 2 \cdot 2 \cdot 3 \cdot 3 = 36$

$\Rightarrow \frac{\overset{3}{\cancel{108}}}{\underset{14}{\cancel{504}}} = \frac{3}{14}$

60.

$\frac{7}{30} = \frac{21}{90}$ $\frac{5}{18} = \frac{25}{90}$

$30 = 2 \cdot 3 \cdot 5$
 $18 = 2 \cdot 3 \cdot 3$ } $\text{kgV} = 2 \cdot 3 \cdot 3 \cdot 5 = 90$

61.

$\frac{1}{4} = \frac{7}{28}$, $\frac{2}{7} = \frac{8}{28}$

$\Rightarrow \frac{2}{7} - \frac{1}{4} = \frac{8}{28} - \frac{7}{28} = \frac{1}{28}$

62.

$20 = 2 \cdot 2 \cdot 5$
 $18 = 2 \cdot 3 \cdot 3$
 $30 = 2 \cdot 3 \cdot 5$ } $\text{kgV} = 2 \cdot 2 \cdot 3 \cdot 3 \cdot 5 = 180$

$\Rightarrow \frac{3}{20} + \frac{5}{18} + \frac{7}{30} = \frac{27}{180} + \frac{50}{180} + \frac{42}{180} = \frac{119}{180}$

$\Rightarrow \frac{180}{180} - \frac{119}{180} = \frac{61}{180}$

63.

$0,32 = \frac{32}{100} = \frac{8}{25} = \frac{64}{200}$

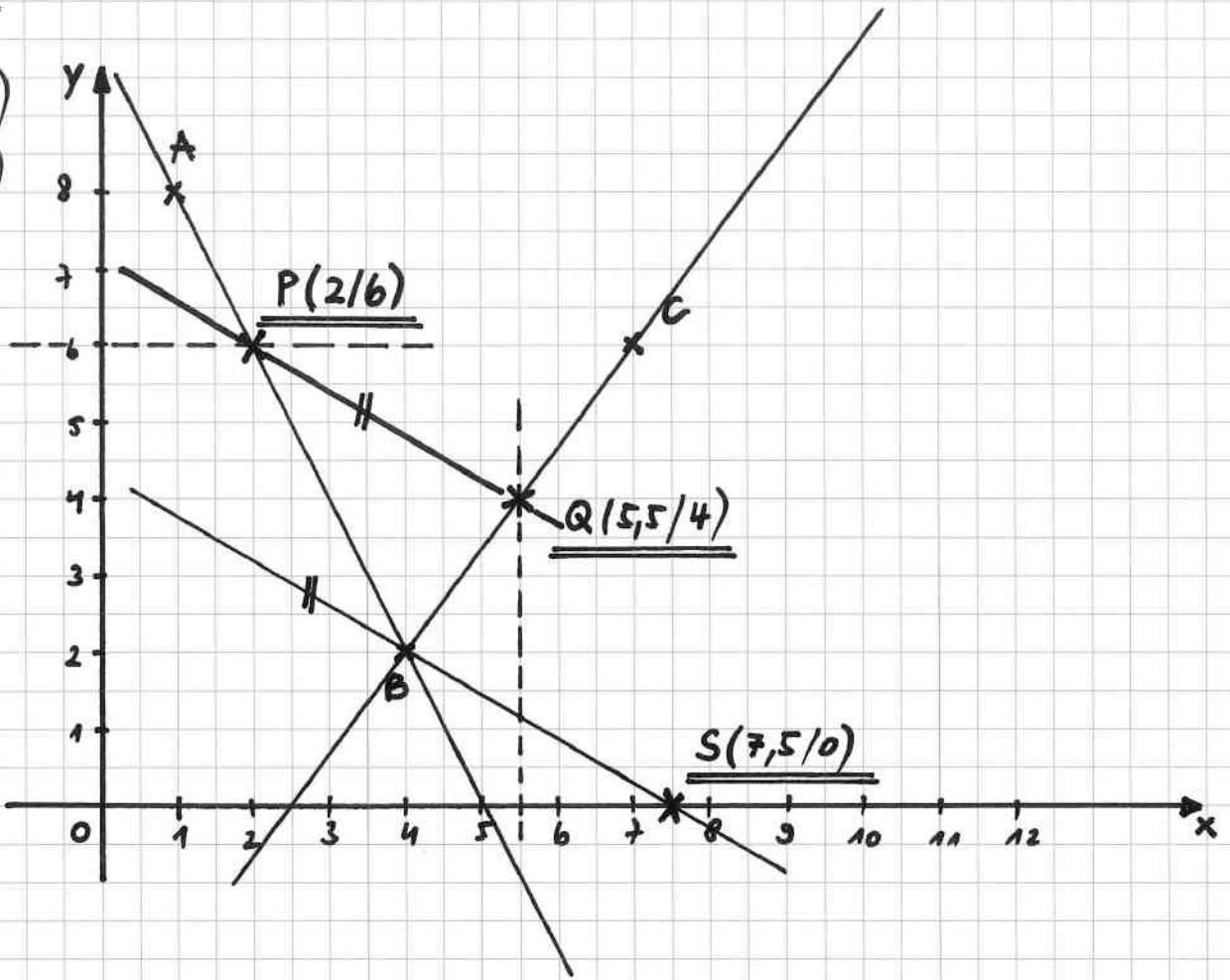
$\frac{13}{40} = \frac{65}{200}$

$\Rightarrow \frac{13}{40} > 0,32$

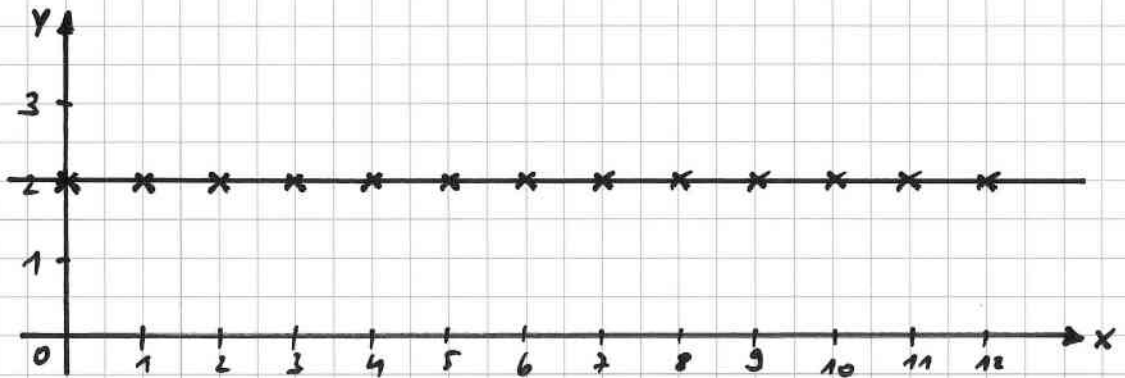
64.

a.)

b.)



65.



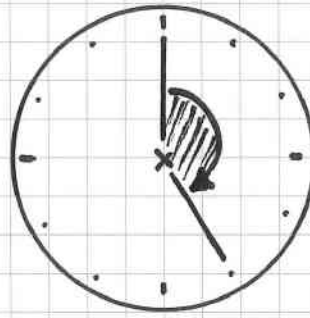
Die Punkte liegen auf einer Parallelen
zur x-Achse im Abstand 2.

66.

$$60 \text{ Min.} \hat{=} 360^\circ$$

$$5 \text{ Min.} \hat{=} 30^\circ$$

$$25 \text{ Min.} \hat{=} \underline{\underline{150^\circ}}$$

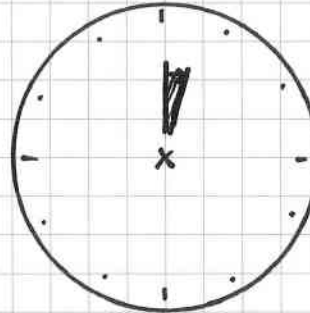


67.

$$60 \text{ Min.} \hat{=} \frac{360^\circ}{12} = 30^\circ$$

$$5 \text{ Min.} \hat{=} 2,5^\circ$$

$$25 \text{ Min.} \hat{=} \underline{\underline{12,5^\circ}}$$



68.

a.)

b.)



$$c.) \quad 3 \cdot 30^\circ + 20 \cdot 0,5^\circ =$$

$$90^\circ + 10^\circ =$$

$$\underline{\underline{100^\circ}}$$

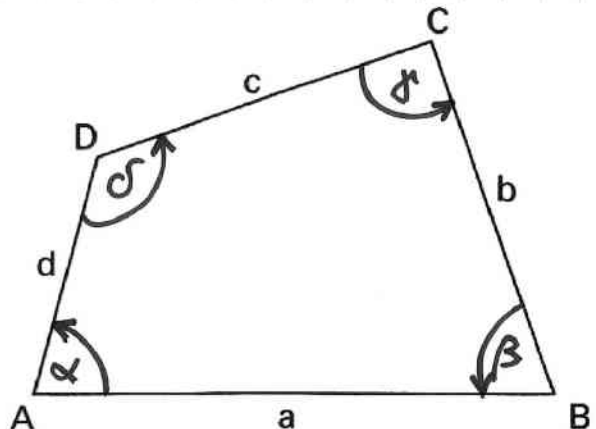
69.

$$\alpha = \sphericalangle ad = \sphericalangle BAD$$

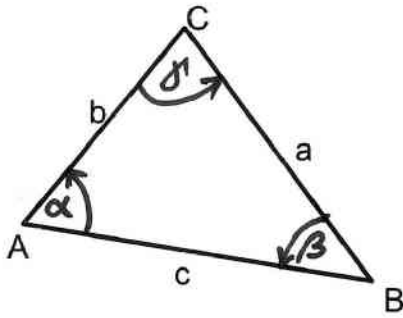
$$\beta = \sphericalangle ba = \sphericalangle CBA$$

$$\gamma = \sphericalangle cb = \sphericalangle DCB$$

$$\delta = \sphericalangle dc = \sphericalangle ADC$$



70.



$$\alpha = \sphericalangle cb = \sphericalangle BAC$$

$$\beta = \sphericalangle ac = \sphericalangle CBA$$

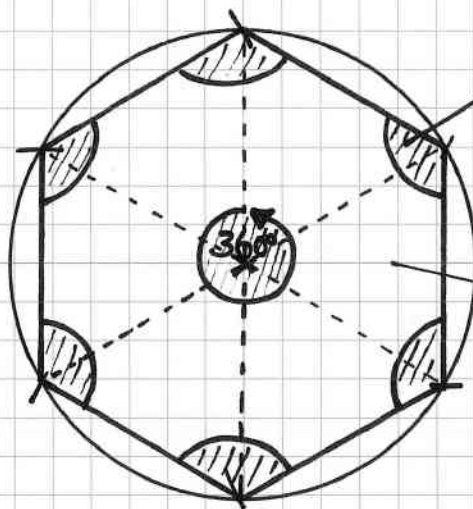
$$\gamma = \sphericalangle ba = \sphericalangle ACB$$

71

a.) 181°

b.) 89°

72



Innenwinkel

Winkelsumme in
einem Dreieck : 180°

$$6 \cdot 180^\circ - 360^\circ = \underline{\underline{720^\circ}}$$