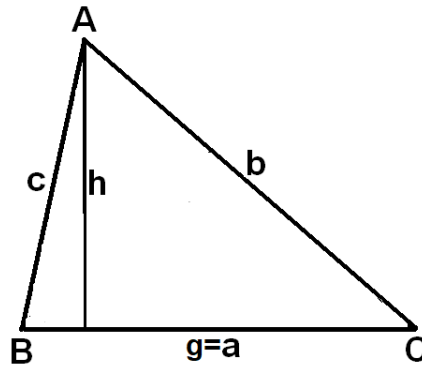


Mathematik-Aufgabenpool

> Berechnungen in allgemeinen Dreiecken I

Einleitung: In einem allgemeinen Dreieck $\triangle ABC$ mit den Seiten a, b, c , der Grundseite $g = a$ und der Höhe h zur Grundseite g lassen sich Umfang und Flächeninhalt des Dreiecks berechnen als: $u = a + b + c$, $A = gh/2$. Umstellen der Flächenformel führt auf die Berechnung von Grundseite g bzw. Höhe h . Im rechtwinkligen Dreieck gilt: $g = a$, $h = b$ mit dem rechten Winkel zwischen den Seiten a und b .



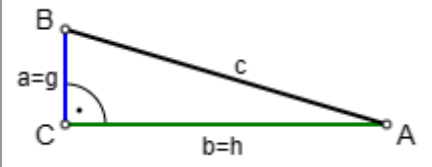
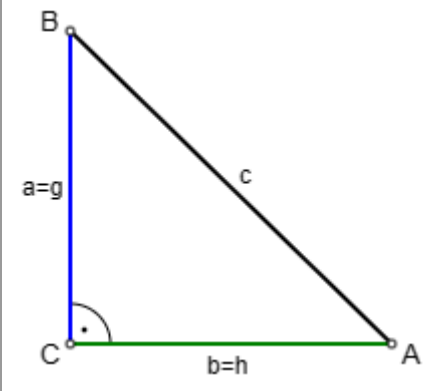
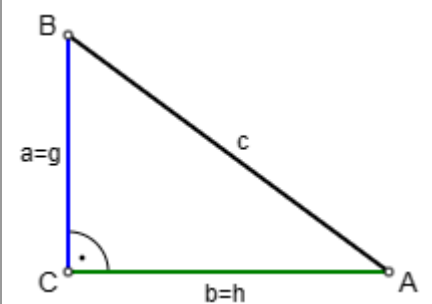
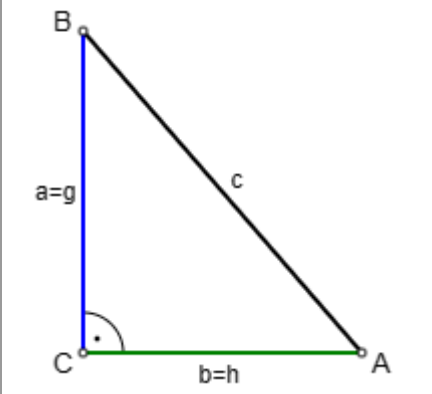
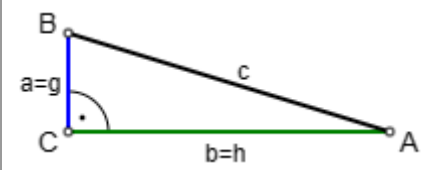
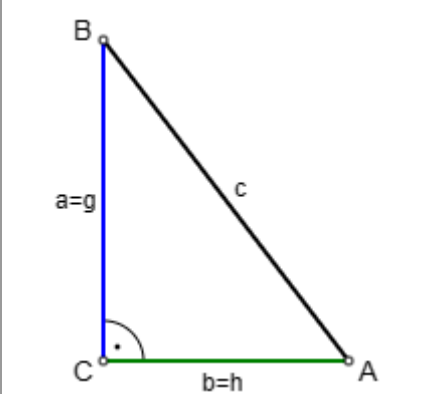
Allgemeines Dreieck: Seiten a, b, c ; Grundseite $g = a$, Höhe h

Formelsammlung:

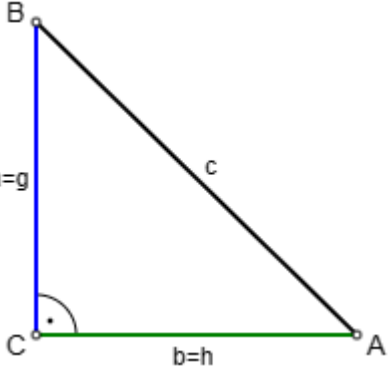
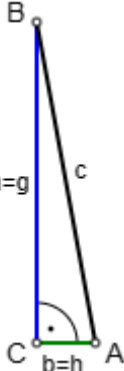
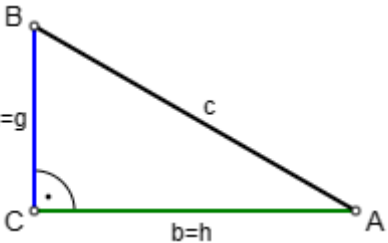
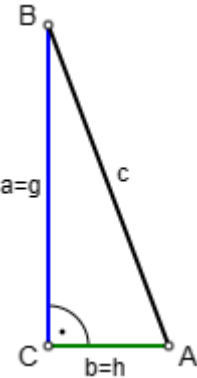
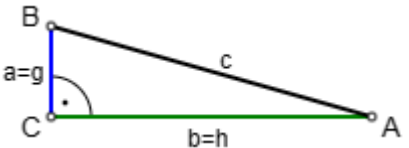
Grundseite, Höhe	$g = a$	h	
Umfang	$u = a + b + c$		
Flächeninhalt	$A = \frac{1}{2} gh$	$g = \frac{2A}{h}$	$h = \frac{2A}{g}$

Aufgabe 1: Berechne Umfang und Flächeninhalt des rechtwinkligen Dreiecks (Seiten a, b, c , Grundseite $g = a$, Höhe $h = b$, $u =$ Umfang, $A =$ Flächeninhalt).

Nr.	Gegeben:	Grafik:
1	$g = a = 4.4 \text{ cm}$, $h = b = 5.1 \text{ cm}$, $c = 6.7 \text{ cm}$	<p>The diagram shows a right-angled triangle with vertices B at the top, C at the bottom left, and A at the bottom right. The vertical leg BC is labeled 'a=g' and is blue. The horizontal leg CA is labeled 'b=h' and is green. The hypotenuse BA is labeled 'c'. A right-angle symbol is shown at vertex C.</p>

2	$g = a = 2.7 \text{ cm}, h = b = 9.2 \text{ cm}, c = 9.6 \text{ cm}$	
3	$g = a = 8.8 \text{ cm}, h = b = 9 \text{ cm}, c = 12.6 \text{ cm}$	
4	$g = a = 5.1 \text{ cm}, h = b = 6.9 \text{ cm}, c = 8.6 \text{ cm}$	
5	$g = a = 6.7 \text{ cm}, h = b = 5.8 \text{ cm}, c = 8.9 \text{ cm}$	
6	$g = a = 3 \text{ cm}, h = b = 9.8 \text{ cm}, c = 10.2 \text{ cm}$	
7	$g = a = 9.3 \text{ cm}, h = b = 7.1 \text{ cm}, c = 11.7 \text{ cm}$	

8	$g = a = 8.8 \text{ cm}, h = b = 6.3 \text{ cm}, c = 10.8 \text{ cm}$	
9	$g = a = 8 \text{ cm}, h = b = 5.9 \text{ cm}, c = 9.9 \text{ cm}$	
10	$g = a = 2.1 \text{ cm}, h = b = 8.4 \text{ cm}, c = 8.7 \text{ cm}$	
11	$g = a = 1.6 \text{ cm}, h = b = 2.5 \text{ cm}, c = 3 \text{ cm}$	
12	$g = a = 7.8 \text{ cm}, h = b = 1.8 \text{ cm}, c = 8 \text{ cm}$	

13	$g = a = 7.6 \text{ cm}, h = b = 7.8 \text{ cm}, c = 10.9 \text{ cm}$	
14	$g = a = 7.8 \text{ cm}, h = b = 1.4 \text{ cm}, c = 7.9 \text{ cm}$	
15	$g = a = 4.3 \text{ cm}, h = b = 7.5 \text{ cm}, c = 8.6 \text{ cm}$	
16	$g = a = 9.3 \text{ cm}, h = b = 3.5 \text{ cm}, c = 9.9 \text{ cm}$	
17	$g = a = 1.7 \text{ cm}, h = b = 6 \text{ cm}, c = 6.2 \text{ cm}$	

18	$g = a = 2.1 \text{ cm}, h = b = 1.4 \text{ cm}, c = 2.5 \text{ cm}$	
19	$g = a = 4.2 \text{ cm}, h = b = 5 \text{ cm}, c = 6.5 \text{ cm}$	
20	$g = a = 3 \text{ cm}, h = b = 3.5 \text{ cm}, c = 4.6 \text{ cm}$	

Vorgehensweise: Zur Ermittlung der fehlenden Größen beim rechtwinkligen Dreieck ist die obige Formelsammlung anzuwenden.

Lösungen:

Nr.	Gegeben:	Lösungen
1	$g = a = 4.4 \text{ cm}, h = b = 5.1 \text{ cm}, c = 6.7 \text{ cm}$	$u = 16.2 \text{ cm}, A = 11.2 \text{ cm}^2$
2	$g = a = 2.7 \text{ cm}, h = b = 9.2 \text{ cm}, c = 9.6 \text{ cm}$	$u = 21.5 \text{ cm}, A = 12.4 \text{ cm}^2$
3	$g = a = 8.8 \text{ cm}, h = b = 9 \text{ cm}, c = 12.6 \text{ cm}$	$u = 30.4 \text{ cm}, A = 39.6 \text{ cm}^2$
4	$g = a = 5.1 \text{ cm}, h = b = 6.9 \text{ cm}, c = 8.6 \text{ cm}$	$u = 20.6 \text{ cm}, A = 17.6 \text{ cm}^2$
5	$g = a = 6.7 \text{ cm}, h = b = 5.8 \text{ cm}, c = 8.9 \text{ cm}$	$u = 21.4 \text{ cm}, A = 19.4 \text{ cm}^2$
6	$g = a = 3 \text{ cm}, h = b = 9.8 \text{ cm}, c = 10.2 \text{ cm}$	$u = 23 \text{ cm}, A = 14.7 \text{ cm}^2$
7	$g = a = 9.3 \text{ cm}, h = b = 7.1 \text{ cm}, c = 11.7 \text{ cm}$	$u = 28.1 \text{ cm}, A = 33 \text{ cm}^2$
8	$g = a = 8.8 \text{ cm}, h = b = 6.3 \text{ cm}, c = 10.8 \text{ cm}$	$u = 25.9 \text{ cm}, A = 27.7 \text{ cm}^2$
9	$g = a = 8 \text{ cm}, h = b = 5.9 \text{ cm}, c = 9.9 \text{ cm}$	$u = 23.8 \text{ cm}, A = 23.6 \text{ cm}^2$
10	$g = a = 2.1 \text{ cm}, h = b = 8.4 \text{ cm}, c = 8.7 \text{ cm}$	$u = 19.2 \text{ cm}, A = 8.8 \text{ cm}^2$
11	$g = a = 1.6 \text{ cm}, h = b = 2.5 \text{ cm}, c = 3 \text{ cm}$	$u = 7.1 \text{ cm}, A = 2 \text{ cm}^2$
12	$g = a = 7.8 \text{ cm}, h = b = 1.8 \text{ cm}, c = 8 \text{ cm}$	$u = 17.6 \text{ cm}, A = 7 \text{ cm}^2$
13	$g = a = 7.6 \text{ cm}, h = b = 7.8 \text{ cm}, c = 10.9 \text{ cm}$	$u = 26.3 \text{ cm}, A = 29.6 \text{ cm}^2$
14	$g = a = 7.8 \text{ cm}, h = b = 1.4 \text{ cm}, c = 7.9 \text{ cm}$	$u = 17.1 \text{ cm}, A = 5.5 \text{ cm}^2$
15	$g = a = 4.3 \text{ cm}, h = b = 7.5 \text{ cm}, c = 8.6 \text{ cm}$	$u = 20.4 \text{ cm}, A = 16.1 \text{ cm}^2$

16	$g = a = 9.3 \text{ cm}, h = b = 3.5 \text{ cm}, c = 9.9 \text{ cm}$	$u = 22.7 \text{ cm}, A = 16.3 \text{ cm}^2$
17	$g = a = 1.7 \text{ cm}, h = b = 6 \text{ cm}, c = 6.2 \text{ cm}$	$u = 13.9 \text{ cm}, A = 5.1 \text{ cm}^2$
18	$g = a = 2.1 \text{ cm}, h = b = 1.4 \text{ cm}, c = 2.5 \text{ cm}$	$u = 6 \text{ cm}, A = 1.5 \text{ cm}^2$
19	$g = a = 4.2 \text{ cm}, h = b = 5 \text{ cm}, c = 6.5 \text{ cm}$	$u = 15.7 \text{ cm}, A = 10.5 \text{ cm}^2$
20	$g = a = 3 \text{ cm}, h = b = 3.5 \text{ cm}, c = 4.6 \text{ cm}$	$u = 11.1 \text{ cm}, A = 5.3 \text{ cm}^2$

Aufgabe 2: Berechne Umfang und Flächeninhalt des rechtwinkligen Dreiecks (Seiten a, b, c , Grundseite $g = a$, Höhe $h = b$, $u =$ Umfang, $A =$ Flächeninhalt).

Nr.	Gegeben:
1	$g = a = 21.8 \text{ dm}, h = b = 21.8 \text{ dm}, c = 30.8 \text{ dm}$
2	$g = a = 18.2 \text{ dm}, h = b = 11.6 \text{ dm}, c = 21.6 \text{ dm}$
3	$g = a = 11.8 \text{ mm}, h = b = 24.4 \text{ mm}, c = 27.1 \text{ mm}$
4	$g = a = 9.5 \text{ mm}, h = b = 13.8 \text{ mm}, c = 16.8 \text{ mm}$
5	$g = a = 29.4 \text{ dm}, h = b = 24.8 \text{ dm}, c = 38.5 \text{ dm}$
6	$g = a = 25.2 \text{ cm}, h = b = 20.4 \text{ cm}, c = 32.4 \text{ cm}$
7	$g = a = 29 \text{ m}, h = b = 10.3 \text{ m}, c = 30.8 \text{ m}$
8	$g = a = 10.1 \text{ dm}, h = b = 17.1 \text{ dm}, c = 19.9 \text{ dm}$
9	$g = a = 30.4 \text{ mm}, h = b = 20.1 \text{ mm}, c = 36.4 \text{ mm}$
10	$g = a = 26.3 \text{ m}, h = b = 9.9 \text{ m}, c = 28.1 \text{ m}$
11	$g = a = 13.9 \text{ dm}, h = b = 7.1 \text{ dm}, c = 15.6 \text{ dm}$
12	$g = a = 16.1 \text{ cm}, h = b = 21.3 \text{ cm}, c = 26.7 \text{ cm}$
13	$g = a = 6.3 \text{ mm}, h = b = 15.5 \text{ mm}, c = 16.7 \text{ mm}$
14	$g = a = 16.5 \text{ mm}, h = b = 7.5 \text{ mm}, c = 18.1 \text{ mm}$
15	$g = a = 30.9 \text{ mm}, h = b = 8.5 \text{ mm}, c = 32 \text{ mm}$
16	$g = a = 29.9 \text{ dm}, h = b = 22.3 \text{ dm}, c = 37.3 \text{ dm}$
17	$g = a = 32.8 \text{ mm}, h = b = 5.5 \text{ mm}, c = 33.3 \text{ mm}$
18	$g = a = 5.5 \text{ dm}, h = b = 21.2 \text{ dm}, c = 21.9 \text{ dm}$
19	$g = a = 27 \text{ dm}, h = b = 17.5 \text{ dm}, c = 32.2 \text{ dm}$
20	$g = a = 13 \text{ mm}, h = b = 16 \text{ mm}, c = 20.6 \text{ mm}$

Vorgehensweise: Zur Ermittlung der fehlenden Größen beim rechtwinkligen Dreieck ist die obige Formelsammlung anzuwenden.

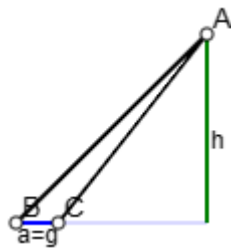
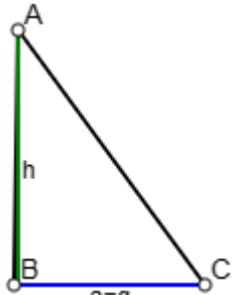
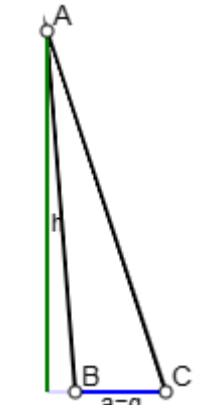
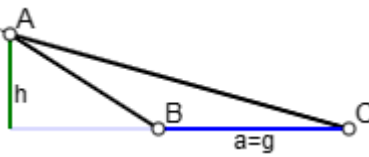
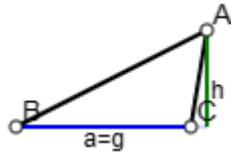
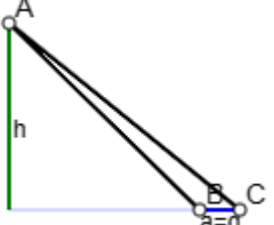
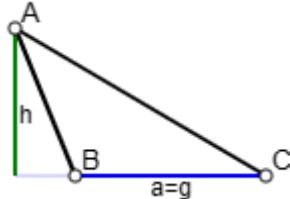
Lösungen:

Nr.	Gegeben:	Lösungen
1	$g = a = 21.8 \text{ dm}, h = b = 21.8 \text{ dm}, c = 30.8 \text{ dm}$	$u = 74.4 \text{ dm}, A = 237.6 \text{ dm}^2$
2	$g = a = 18.2 \text{ dm}, h = b = 11.6 \text{ dm}, c = 21.6 \text{ dm}$	$u = 51.4 \text{ dm}, A = 105.6 \text{ dm}^2$
3	$g = a = 11.8 \text{ mm}, h = b = 24.4 \text{ mm}, c = 27.1 \text{ mm}$	$u = 63.3 \text{ mm}, A = 144 \text{ mm}^2$
4	$g = a = 9.5 \text{ mm}, h = b = 13.8 \text{ mm}, c = 16.8 \text{ mm}$	$u = 40.1 \text{ mm}, A = 65.6 \text{ mm}^2$
5	$g = a = 29.4 \text{ dm}, h = b = 24.8 \text{ dm}, c = 38.5 \text{ dm}$	$u = 92.7 \text{ dm}, A = 364.6 \text{ dm}^2$
6	$g = a = 25.2 \text{ cm}, h = b = 20.4 \text{ cm}, c = 32.4 \text{ cm}$	$u = 78 \text{ cm}, A = 257 \text{ cm}^2$
7	$g = a = 29 \text{ m}, h = b = 10.3 \text{ m}, c = 30.8 \text{ m}$	$u = 70.1 \text{ m}, A = 149.4 \text{ m}^2$
8	$g = a = 10.1 \text{ dm}, h = b = 17.1 \text{ dm}, c = 19.9 \text{ dm}$	$u = 47.1 \text{ dm}, A = 86.4 \text{ dm}^2$

9	$g = a = 30.4 \text{ mm}, h = b = 20.1 \text{ mm}, c = 36.4 \text{ mm}$	$u = 86.9 \text{ mm}, A = 305.5 \text{ mm}^2$
10	$g = a = 26.3 \text{ m}, h = b = 9.9 \text{ m}, c = 28.1 \text{ m}$	$u = 64.3 \text{ m}, A = 130.2 \text{ m}^2$
11	$g = a = 13.9 \text{ dm}, h = b = 7.1 \text{ dm}, c = 15.6 \text{ dm}$	$u = 36.6 \text{ dm}, A = 49.3 \text{ dm}^2$
12	$g = a = 16.1 \text{ cm}, h = b = 21.3 \text{ cm}, c = 26.7 \text{ cm}$	$u = 64.1 \text{ cm}, A = 171.5 \text{ cm}^2$
13	$g = a = 6.3 \text{ mm}, h = b = 15.5 \text{ mm}, c = 16.7 \text{ mm}$	$u = 38.5 \text{ mm}, A = 48.8 \text{ mm}^2$
14	$g = a = 16.5 \text{ mm}, h = b = 7.5 \text{ mm}, c = 18.1 \text{ mm}$	$u = 42.1 \text{ mm}, A = 61.9 \text{ mm}^2$
15	$g = a = 30.9 \text{ mm}, h = b = 8.5 \text{ mm}, c = 32 \text{ mm}$	$u = 71.4 \text{ mm}, A = 131.3 \text{ mm}^2$
16	$g = a = 29.9 \text{ dm}, h = b = 22.3 \text{ dm}, c = 37.3 \text{ dm}$	$u = 89.5 \text{ dm}, A = 333.4 \text{ dm}^2$
17	$g = a = 32.8 \text{ mm}, h = b = 5.5 \text{ mm}, c = 33.3 \text{ mm}$	$u = 71.6 \text{ mm}, A = 90.2 \text{ mm}^2$
18	$g = a = 5.5 \text{ dm}, h = b = 21.2 \text{ dm}, c = 21.9 \text{ dm}$	$u = 48.6 \text{ dm}, A = 58.3 \text{ dm}^2$
19	$g = a = 27 \text{ dm}, h = b = 17.5 \text{ dm}, c = 32.2 \text{ dm}$	$u = 76.7 \text{ dm}, A = 236.3 \text{ dm}^2$
20	$g = a = 13 \text{ mm}, h = b = 16 \text{ mm}, c = 20.6 \text{ mm}$	$u = 49.6 \text{ mm}, A = 104 \text{ mm}^2$

Aufgabe 3: Berechne Umfang und Flächeninhalt des allgemeinen Dreiecks (Seiten a, b, c , Grundseite $g = a$, Höhe h , $u =$ Umfang, $A =$ Flächeninhalt).

Nr.	Gegeben:	Grafik:
1	$a = g = 6.7 \text{ cm}, b = 2.7 \text{ cm}, c = 4.5 \text{ cm}, h = 1.3 \text{ cm}$	
2	$a = g = 1.8 \text{ cm}, b = 6.2 \text{ cm}, c = 4.7 \text{ cm}, h = 3 \text{ cm}$	
3	$a = g = 9.6 \text{ cm}, b = 5.7 \text{ cm}, c = 7.1 \text{ cm}, h = 4.2 \text{ cm}$	
4	$a = g = 4.2 \text{ cm}, b = 3.2 \text{ cm}, c = 5.3 \text{ cm}, h = 3.2 \text{ cm}$	
5	$a = g = 6.3 \text{ cm}, b = 7.1 \text{ cm}, c = 1.1 \text{ cm}, h = 0.8 \text{ cm}$	
6	$a = g = 3.8 \text{ cm}, b = 6 \text{ cm}, c = 2.6 \text{ cm}, h = 1.7 \text{ cm}$	
7	$a = g = 1.5 \text{ cm}, b = 11.3 \text{ cm}, c = 9.9 \text{ cm}, h = 3.8 \text{ cm}$	

8	$a = g = 1.5 \text{ cm}$, $b = 8.8 \text{ cm}$, $c = 9.8 \text{ cm}$, $h = 6.9 \text{ cm}$	
9	$a = g = 6.6 \text{ cm}$, $b = 10.9 \text{ cm}$, $c = 8.8 \text{ cm}$, $h = 8.8 \text{ cm}$	
10	$a = g = 2 \text{ cm}$, $b = 8.4 \text{ cm}$, $c = 8 \text{ cm}$, $h = 8 \text{ cm}$	
11	$a = g = 5.3 \text{ cm}$, $b = 9.8 \text{ cm}$, $c = 4.9 \text{ cm}$, $h = 2.6 \text{ cm}$	
12	$a = g = 5.7 \text{ cm}$, $b = 3.2 \text{ cm}$, $c = 7 \text{ cm}$, $h = 3.2 \text{ cm}$	
13	$a = g = 1.2 \text{ cm}$, $b = 8.7 \text{ cm}$, $c = 7.8 \text{ cm}$, $h = 5.4 \text{ cm}$	
14	$a = g = 3.6 \text{ cm}$, $b = 5.5 \text{ cm}$, $c = 3 \text{ cm}$, $h = 2.8 \text{ cm}$	

15	$a = g = 3.3 \text{ cm}$, $b = 1.6 \text{ cm}$, $c = 4.3 \text{ cm}$, $h = 1.4 \text{ cm}$	
16	$a = g = 3.3 \text{ cm}$, $b = 3 \text{ cm}$, $c = 1.8 \text{ cm}$, $h = 1.6 \text{ cm}$	
17	$a = g = 2.4 \text{ cm}$, $b = 5.2 \text{ cm}$, $c = 4.5 \text{ cm}$, $h = 4.5 \text{ cm}$	
18	$a = g = 9.5 \text{ cm}$, $b = 9.1 \text{ cm}$, $c = 7.7 \text{ cm}$, $h = 6.9 \text{ cm}$	
19	$a = g = 1.9 \text{ cm}$, $b = 5 \text{ cm}$, $c = 3.4 \text{ cm}$, $h = 2.2 \text{ cm}$	
20	$a = g = 7.9 \text{ cm}$, $b = 7.8 \text{ cm}$, $c = 3.6 \text{ cm}$, $h = 3.5 \text{ cm}$	

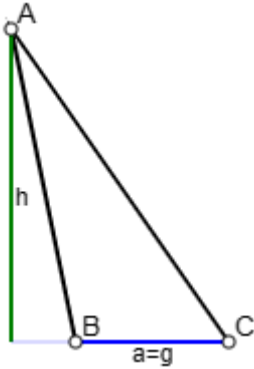
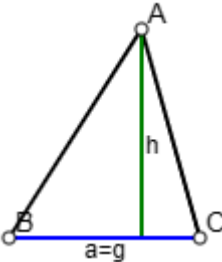
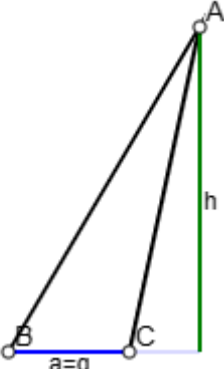

Vorgehensweise: Zur Ermittlung der fehlenden Größen beim allgemeinen Dreieck ist die obige Formelsammlung anzuwenden.

Lösungen:

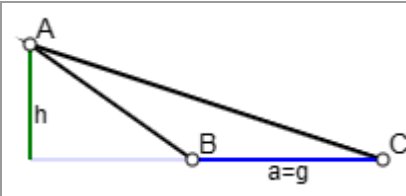
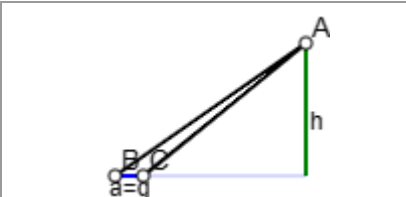

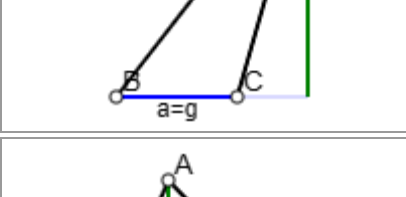
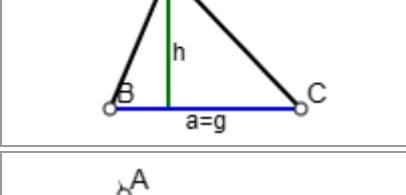
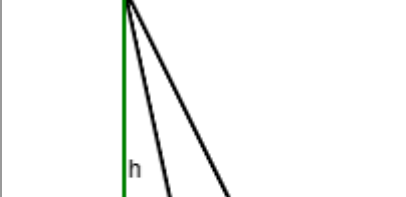
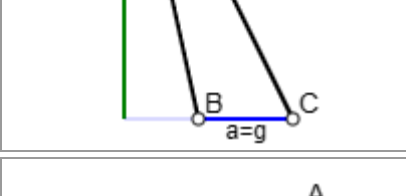
Nr.	Gegeben:	Lösungen:
1	$a = g = 6.7 \text{ cm}$, $b = 2.7 \text{ cm}$, $c = 4.5 \text{ cm}$, $h = 1.3 \text{ cm}$	$u = 13.9 \text{ cm}$, $A = 4.3 \text{ cm}^2$
2	$a = g = 1.8 \text{ cm}$, $b = 6.2 \text{ cm}$, $c = 4.7 \text{ cm}$, $h = 3 \text{ cm}$	$u = 12.7 \text{ cm}$, $A = 2.6 \text{ cm}^2$
3	$a = g = 9.6 \text{ cm}$, $b = 5.7 \text{ cm}$, $c = 7.1 \text{ cm}$, $h = 4.2 \text{ cm}$	$u = 22.4 \text{ cm}$, $A = 20.2 \text{ cm}^2$
4	$a = g = 4.2 \text{ cm}$, $b = 3.2 \text{ cm}$, $c = 5.3 \text{ cm}$, $h = 3.2 \text{ cm}$	$u = 12.7 \text{ cm}$, $A = 6.6 \text{ cm}^2$
5	$a = g = 6.3 \text{ cm}$, $b = 7.1 \text{ cm}$, $c = 1.1 \text{ cm}$, $h = 0.8 \text{ cm}$	$u = 14.5 \text{ cm}$, $A = 2.5 \text{ cm}^2$
6	$a = g = 3.8 \text{ cm}$, $b = 6 \text{ cm}$, $c = 2.6 \text{ cm}$, $h = 1.7 \text{ cm}$	$u = 12.4 \text{ cm}$, $A = 3.3 \text{ cm}^2$
7	$a = g = 1.5 \text{ cm}$, $b = 11.3 \text{ cm}$, $c = 9.9 \text{ cm}$, $h = 3.8 \text{ cm}$	$u = 22.7 \text{ cm}$, $A = 3 \text{ cm}^2$
8	$a = g = 1.5 \text{ cm}$, $b = 8.8 \text{ cm}$, $c = 9.8 \text{ cm}$, $h = 6.9 \text{ cm}$	$u = 20.1 \text{ cm}$, $A = 5.4 \text{ cm}^2$
9	$a = g = 6.6 \text{ cm}$, $b = 10.9 \text{ cm}$, $c = 8.8 \text{ cm}$, $h = 8.8 \text{ cm}$	$u = 26.3 \text{ cm}$, $A = 29 \text{ cm}^2$

10	$a = g = 2 \text{ cm}, b = 8.4 \text{ cm}, c = 8 \text{ cm}, h = 8 \text{ cm}$	$u = 18.4 \text{ cm}, A = 8 \text{ cm}^2$
11	$a = g = 5.3 \text{ cm}, b = 9.8 \text{ cm}, c = 4.9 \text{ cm}, h = 2.6 \text{ cm}$	$u = 20 \text{ cm}, A = 6.9 \text{ cm}^2$
12	$a = g = 5.7 \text{ cm}, b = 3.2 \text{ cm}, c = 7 \text{ cm}, h = 3.2 \text{ cm}$	$u = 15.9 \text{ cm}, A = 9.1 \text{ cm}^2$
13	$a = g = 1.2 \text{ cm}, b = 8.7 \text{ cm}, c = 7.8 \text{ cm}, h = 5.4 \text{ cm}$	$u = 17.7 \text{ cm}, A = 3.1 \text{ cm}^2$
14	$a = g = 3.6 \text{ cm}, b = 5.5 \text{ cm}, c = 3 \text{ cm}, h = 2.8 \text{ cm}$	$u = 12.1 \text{ cm}, A = 5 \text{ cm}^2$
15	$a = g = 3.3 \text{ cm}, b = 1.6 \text{ cm}, c = 4.3 \text{ cm}, h = 1.4 \text{ cm}$	$u = 9.2 \text{ cm}, A = 2.4 \text{ cm}^2$
16	$a = g = 3.3 \text{ cm}, b = 3 \text{ cm}, c = 1.8 \text{ cm}, h = 1.6 \text{ cm}$	$u = 8.1 \text{ cm}, A = 2.7 \text{ cm}^2$
17	$a = g = 2.4 \text{ cm}, b = 5.2 \text{ cm}, c = 4.5 \text{ cm}, h = 4.5 \text{ cm}$	$u = 12.1 \text{ cm}, A = 5.4 \text{ cm}^2$
18	$a = g = 9.5 \text{ cm}, b = 9.1 \text{ cm}, c = 7.7 \text{ cm}, h = 6.9 \text{ cm}$	$u = 26.3 \text{ cm}, A = 32.7 \text{ cm}^2$
19	$a = g = 1.9 \text{ cm}, b = 5 \text{ cm}, c = 3.4 \text{ cm}, h = 2.2 \text{ cm}$	$u = 10.3 \text{ cm}, A = 2 \text{ cm}^2$
20	$a = g = 7.9 \text{ cm}, b = 7.8 \text{ cm}, c = 3.6 \text{ cm}, h = 3.5 \text{ cm}$	$u = 19.3 \text{ cm}, A = 13.7 \text{ cm}^2$

Aufgabe 4: Berechne Umfang und Flächeninhalt des allgemeinen Dreiecks (Seiten a, b, c , Grundseite $g = a$, Höhe h , $u =$ Umfang, $A =$ Flächeninhalt).

Nr.	Gegeben:	Grafik:
1	$a = g = 1 \text{ mm}, b = 2.5 \text{ mm}, c = 2.1 \text{ mm}, h = 2.1 \text{ mm}$	
2	$a = g = 4.3 \text{ cm}, b = 4.9 \text{ cm}, c = 5.6 \text{ cm}, h = 4.7 \text{ cm}$	
3	$a = g = 3 \text{ cm}, b = 8.3 \text{ cm}, c = 9.4 \text{ cm}, h = 8.1 \text{ cm}$	
4	$a = g = 6.9 \text{ m}, b = 6.4 \text{ m}, c = 1.8 \text{ m}, h = 1.7 \text{ m}$	

5	$a = g = 8.5 \text{ m}$, $b = 6.7 \text{ m}$, $c = 3.5 \text{ m}$, $h = 2.6 \text{ m}$	
6	$a = g = 8.3 \text{ cm}$, $b = 10.5 \text{ cm}$, $c = 2.6 \text{ cm}$, $h = 1.6 \text{ cm}$	
7	$a = g = 6.7 \text{ dm}$, $b = 5.7 \text{ dm}$, $c = 2.7 \text{ dm}$, $h = 2.3 \text{ dm}$	
8	$a = g = 4.1 \text{ dm}$, $b = 1.6 \text{ dm}$, $c = 5.4 \text{ dm}$, $h = 1.1 \text{ dm}$	
9	$a = g = 8.5 \text{ mm}$, $b = 12.5 \text{ mm}$, $c = 4.7 \text{ mm}$, $h = 3 \text{ mm}$	
10	$a = g = 4 \text{ mm}$, $b = 1.7 \text{ mm}$, $c = 4.8 \text{ mm}$, $h = 1.6 \text{ mm}$	
11	$a = g = 7.1 \text{ dm}$, $b = 7.9 \text{ dm}$, $c = 8.4 \text{ dm}$, $h = 7.3 \text{ dm}$	
12	$a = g = 2.3 \text{ cm}$, $b = 7.5 \text{ cm}$, $c = 7.4 \text{ cm}$, $h = 7.4 \text{ cm}$	
13	$a = g = 5.7 \text{ mm}$, $b = 12.5 \text{ mm}$, $c = 7.9 \text{ mm}$, $h = 5.8 \text{ mm}$	

14	$a = g = 2.1 \text{ cm}$, $b = 4.1 \text{ cm}$, $c = 2.2 \text{ cm}$, $h = 1.3 \text{ cm}$	
15	$a = g = 1 \text{ cm}$, $b = 7.4 \text{ cm}$, $c = 8.2 \text{ cm}$, $h = 4.7 \text{ cm}$	
16	$a = g = 2.4 \text{ dm}$, $b = 5.1 \text{ dm}$, $c = 6.2 \text{ dm}$, $h = 4.9 \text{ dm}$	
17	$a = g = 2.8 \text{ cm}$, $b = 2.8 \text{ cm}$, $c = 2.2 \text{ cm}$, $h = 2 \text{ cm}$	
18	$a = g = 5.5 \text{ m}$, $b = 10.3 \text{ m}$, $c = 8.6 \text{ m}$, $h = 8.6 \text{ m}$	
19	$a = g = 3.6 \text{ mm}$, $b = 6.4 \text{ mm}$, $c = 8.1 \text{ mm}$, $h = 6.2 \text{ mm}$	
20	$a = g = 7.4 \text{ mm}$, $b = 7.2 \text{ mm}$, $c = 5.2 \text{ mm}$, $h = 4.8 \text{ mm}$	

Vorgehensweise: Zur Ermittlung der fehlenden Größen beim allgemeinen Dreieck ist die obige Formelsammlung anzuwenden.

Lösungen:

Nr.	Gegeben:	Lösungen:
1	a = g = 1 mm, b = 2.5 mm, c = 2.1 mm, h = 2.1 mm	u = 5.6 mm, A = 1.1 mm ²
2	a = g = 4.3 cm, b = 4.9 cm, c = 5.6 cm, h = 4.7 cm	u = 14.8 cm, A = 10.1 cm ²
3	a = g = 3 cm, b = 8.3 cm, c = 9.4 cm, h = 8.1 cm	u = 20.7 cm, A = 12.2 cm ²
4	a = g = 6.9 m, b = 6.4 m, c = 1.8 m, h = 1.7 m	u = 15.1 m, A = 5.7 m ²
5	a = g = 8.5 m, b = 6.7 m, c = 3.5 m, h = 2.6 m	u = 18.7 m, A = 11 m ²
6	a = g = 8.3 cm, b = 10.5 cm, c = 2.6 cm, h = 1.6 cm	u = 21.4 cm, A = 6.5 cm ²
7	a = g = 6.7 dm, b = 5.7 dm, c = 2.7 dm, h = 2.3 dm	u = 15.1 dm, A = 7.6 dm ²
8	a = g = 4.1 dm, b = 1.6 dm, c = 5.4 dm, h = 1.1 dm	u = 11.1 dm, A = 2.2 dm ²
9	a = g = 8.5 mm, b = 12.5 mm, c = 4.7 mm, h = 3 mm	u = 25.7 mm, A = 12.7 mm ²
10	a = g = 4 mm, b = 1.7 mm, c = 4.8 mm, h = 1.6 mm	u = 10.5 mm, A = 3.1 mm ²
11	a = g = 7.1 dm, b = 7.9 dm, c = 8.4 dm, h = 7.3 dm	u = 23.4 dm, A = 26 dm ²
12	a = g = 2.3 cm, b = 7.5 cm, c = 7.4 cm, h = 7.4 cm	u = 17.2 cm, A = 8.5 cm ²
13	a = g = 5.7 mm, b = 12.5 mm, c = 7.9 mm, h = 5.8 mm	u = 26.1 mm, A = 16.6 mm ²
14	a = g = 2.1 cm, b = 4.1 cm, c = 2.2 cm, h = 1.3 cm	u = 8.4 cm, A = 1.3 cm ²
15	a = g = 1 cm, b = 7.4 cm, c = 8.2 cm, h = 4.7 cm	u = 16.6 cm, A = 2.5 cm ²
16	a = g = 2.4 dm, b = 5.1 dm, c = 6.2 dm, h = 4.9 dm	u = 13.7 dm, A = 5.9 dm ²
17	a = g = 2.8 cm, b = 2.8 cm, c = 2.2 cm, h = 2 cm	u = 7.8 cm, A = 2.9 cm ²
18	a = g = 5.5 m, b = 10.3 m, c = 8.6 m, h = 8.6 m	u = 24.4 m, A = 23.7 m ²
19	a = g = 3.6 mm, b = 6.4 mm, c = 8.1 mm, h = 6.2 mm	u = 18.1 mm, A = 11.3 mm ²
20	a = g = 7.4 mm, b = 7.2 mm, c = 5.2 mm, h = 4.8 mm	u = 19.8 mm, A = 17.7 mm ²

Aufgabe 5: Berechne Umfang und Flächeninhalt des allgemeinen Dreiecks (Seiten a, b, c, Grundseite g = a, Höhe h, u = Umfang, A = Flächeninhalt).

Nr.	Gegeben:
1	a = g = 13.6 cm, b = 14.4 cm, c = 10.8 cm, h = 10.2 cm
2	a = g = 13.6 cm, b = 6.1 cm, c = 15.6 cm, h = 6.1 cm
3	a = g = 12.8 cm, b = 11.3 cm, c = 9.6 cm, h = 8.2 cm
4	a = g = 16.8 cm, b = 11.9 cm, c = 25.1 cm, h = 10.2 cm
5	a = g = 5.3 cm, b = 8.9 cm, c = 13.4 cm, h = 5.7 cm
6	a = g = 13.2 cm, b = 8.5 cm, c = 16.7 cm, h = 8.4 cm
7	a = g = 14.2 cm, b = 17.4 cm, c = 26.1 cm, h = 16.2 cm
8	a = g = 11.8 cm, b = 9.2 cm, c = 7.9 cm, h = 6.2 cm
9	a = g = 12.8 cm, b = 13.8 cm, c = 8.5 cm, h = 8.3 cm
10	a = g = 12 cm, b = 8.9 cm, c = 19.7 cm, h = 5.7 cm
11	a = g = 5.9 cm, b = 7.2 cm, c = 12.9 cm, h = 2.5 cm
12	a = g = 12.2 cm, b = 14.6 cm, c = 10.8 cm, h = 10.6 cm
13	a = g = 9.3 cm, b = 13.4 cm, c = 17.7 cm, h = 13.2 cm
14	a = g = 13.9 cm, b = 12.8 cm, c = 8.4 cm, h = 7.6 cm

15	$a = g = 10.1 \text{ cm}, b = 5 \text{ cm}, c = 5.5 \text{ cm}, h = 1.4 \text{ cm}$
16	$a = g = 17.2 \text{ cm}, b = 19.6 \text{ cm}, c = 34.8 \text{ cm}, h = 12.1 \text{ cm}$
17	$a = g = 15.4 \text{ cm}, b = 15.9 \text{ cm}, c = 26.4 \text{ cm}, h = 14.4 \text{ cm}$
18	$a = g = 17.7 \text{ cm}, b = 19.1 \text{ cm}, c = 36.3 \text{ cm}, h = 6.2 \text{ cm}$
19	$a = g = 18.3 \text{ cm}, b = 12.9 \text{ cm}, c = 18.3 \text{ cm}, h = 12.1 \text{ cm}$
20	$a = g = 17.3 \text{ cm}, b = 5.1 \text{ cm}, c = 18.7 \text{ cm}, h = 5.1 \text{ cm}$

Vorgehensweise: Zur Ermittlung der fehlenden Größen beim allgemeinen Dreieck ist die obige Formelsammlung anzuwenden.

Lösungen:

Nr.	Gegeben:	Lösungen:
1	$a = g = 13.6 \text{ cm}, b = 14.4 \text{ cm}, c = 10.8 \text{ cm}, h = 10.2 \text{ cm}$	$u = 38.8 \text{ cm}, A = 69.4 \text{ cm}^2$
2	$a = g = 13.6 \text{ cm}, b = 6.1 \text{ cm}, c = 15.6 \text{ cm}, h = 6.1 \text{ cm}$	$u = 35.3 \text{ cm}, A = 41.5 \text{ cm}^2$
3	$a = g = 12.8 \text{ cm}, b = 11.3 \text{ cm}, c = 9.6 \text{ cm}, h = 8.2 \text{ cm}$	$u = 33.7 \text{ cm}, A = 52.5 \text{ cm}^2$
4	$a = g = 16.8 \text{ cm}, b = 11.9 \text{ cm}, c = 25.1 \text{ cm}, h = 10.2 \text{ cm}$	$u = 53.8 \text{ cm}, A = 85.7 \text{ cm}^2$
5	$a = g = 5.3 \text{ cm}, b = 8.9 \text{ cm}, c = 13.4 \text{ cm}, h = 5.7 \text{ cm}$	$u = 27.6 \text{ cm}, A = 15.1 \text{ cm}^2$
6	$a = g = 13.2 \text{ cm}, b = 8.5 \text{ cm}, c = 16.7 \text{ cm}, h = 8.4 \text{ cm}$	$u = 38.4 \text{ cm}, A = 55.4 \text{ cm}^2$
7	$a = g = 14.2 \text{ cm}, b = 17.4 \text{ cm}, c = 26.1 \text{ cm}, h = 16.2 \text{ cm}$	$u = 57.7 \text{ cm}, A = 115 \text{ cm}^2$
8	$a = g = 11.8 \text{ cm}, b = 9.2 \text{ cm}, c = 7.9 \text{ cm}, h = 6.2 \text{ cm}$	$u = 28.9 \text{ cm}, A = 36.6 \text{ cm}^2$
9	$a = g = 12.8 \text{ cm}, b = 13.8 \text{ cm}, c = 8.5 \text{ cm}, h = 8.3 \text{ cm}$	$u = 35.1 \text{ cm}, A = 53.1 \text{ cm}^2$
10	$a = g = 12 \text{ cm}, b = 8.9 \text{ cm}, c = 19.7 \text{ cm}, h = 5.7 \text{ cm}$	$u = 40.6 \text{ cm}, A = 34.2 \text{ cm}^2$
11	$a = g = 5.9 \text{ cm}, b = 7.2 \text{ cm}, c = 12.9 \text{ cm}, h = 2.5 \text{ cm}$	$u = 26 \text{ cm}, A = 7.4 \text{ cm}^2$
12	$a = g = 12.2 \text{ cm}, b = 14.6 \text{ cm}, c = 10.8 \text{ cm}, h = 10.6 \text{ cm}$	$u = 37.6 \text{ cm}, A = 64.7 \text{ cm}^2$
13	$a = g = 9.3 \text{ cm}, b = 13.4 \text{ cm}, c = 17.7 \text{ cm}, h = 13.2 \text{ cm}$	$u = 40.4 \text{ cm}, A = 61.4 \text{ cm}^2$
14	$a = g = 13.9 \text{ cm}, b = 12.8 \text{ cm}, c = 8.4 \text{ cm}, h = 7.6 \text{ cm}$	$u = 35.1 \text{ cm}, A = 52.8 \text{ cm}^2$
15	$a = g = 10.1 \text{ cm}, b = 5 \text{ cm}, c = 5.5 \text{ cm}, h = 1.4 \text{ cm}$	$u = 20.6 \text{ cm}, A = 7.1 \text{ cm}^2$
16	$a = g = 17.2 \text{ cm}, b = 19.6 \text{ cm}, c = 34.8 \text{ cm}, h = 12.1 \text{ cm}$	$u = 71.6 \text{ cm}, A = 104.1 \text{ cm}^2$
17	$a = g = 15.4 \text{ cm}, b = 15.9 \text{ cm}, c = 26.4 \text{ cm}, h = 14.4 \text{ cm}$	$u = 57.7 \text{ cm}, A = 110.9 \text{ cm}^2$
18	$a = g = 17.7 \text{ cm}, b = 19.1 \text{ cm}, c = 36.3 \text{ cm}, h = 6.2 \text{ cm}$	$u = 73.1 \text{ cm}, A = 54.9 \text{ cm}^2$
19	$a = g = 18.3 \text{ cm}, b = 12.9 \text{ cm}, c = 18.3 \text{ cm}, h = 12.1 \text{ cm}$	$u = 49.5 \text{ cm}, A = 110.7 \text{ cm}^2$
20	$a = g = 17.3 \text{ cm}, b = 5.1 \text{ cm}, c = 18.7 \text{ cm}, h = 5.1 \text{ cm}$	$u = 41.1 \text{ cm}, A = 44.1 \text{ cm}^2$

Aufgabe 6: Berechne Umfang und Flächeninhalt des allgemeinen Dreiecks (Seiten a, b, c , Grundseite $g = a$, Höhe $h, u = \text{Umfang}, A = \text{Flächeninhalt}$).

Nr.	Gegeben:
1	$a = g = 19.2 \text{ dm}, b = 14 \text{ dm}, c = 23 \text{ dm}, h = 14 \text{ dm}$
2	$a = g = 21.3 \text{ mm}, b = 20.1 \text{ mm}, c = 26.4 \text{ mm}, h = 19.7 \text{ mm}$
3	$a = g = 38.2 \text{ mm}, b = 19.8 \text{ mm}, c = 21.2 \text{ mm}, h = 7.4 \text{ mm}$
4	$a = g = 19.2 \text{ dm}, b = 18.8 \text{ dm}, c = 20.4 \text{ dm}, h = 17 \text{ dm}$
5	$a = g = 23.9 \text{ m}, b = 16.9 \text{ m}, c = 38.2 \text{ m}, h = 11.3 \text{ m}$
6	$a = g = 39.7 \text{ mm}, b = 23.2 \text{ mm}, c = 31.4 \text{ mm}, h = 18.3 \text{ mm}$
7	$a = g = 5.6 \text{ dm}, b = 33.4 \text{ dm}, c = 35.2 \text{ dm}, h = 32.4 \text{ dm}$
8	$a = g = 12.6 \text{ m}, b = 18.3 \text{ m}, c = 23.2 \text{ m}, h = 18.2 \text{ m}$

9	$a = g = 30.8 \text{ mm}, b = 34.2 \text{ mm}, c = 18.6 \text{ mm}, h = 18.5 \text{ mm}$
10	$a = g = 11.6 \text{ mm}, b = 15 \text{ mm}, c = 25.9 \text{ mm}, h = 6.7 \text{ mm}$
11	$a = g = 31.2 \text{ m}, b = 32.8 \text{ m}, c = 33.6 \text{ m}, h = 29.3 \text{ m}$
12	$a = g = 33.8 \text{ cm}, b = 20.6 \text{ cm}, c = 51.6 \text{ cm}, h = 12.7 \text{ cm}$
13	$a = g = 20.6 \text{ dm}, b = 17.6 \text{ dm}, c = 16.6 \text{ dm}, h = 13.6 \text{ dm}$
14	$a = g = 32.4 \text{ dm}, b = 14.5 \text{ dm}, c = 30.6 \text{ dm}, h = 13.6 \text{ dm}$
15	$a = g = 25.2 \text{ cm}, b = 30.4 \text{ cm}, c = 32.1 \text{ cm}, h = 28.5 \text{ cm}$
16	$a = g = 24.4 \text{ cm}, b = 28.4 \text{ cm}, c = 45.1 \text{ cm}, h = 25.3 \text{ cm}$
17	$a = g = 22.1 \text{ dm}, b = 18.2 \text{ dm}, c = 18.3 \text{ dm}, h = 14.5 \text{ dm}$
18	$a = g = 21 \text{ mm}, b = 38.2 \text{ mm}, c = 35.2 \text{ mm}, h = 34.8 \text{ mm}$
19	$a = g = 38.8 \text{ cm}, b = 22.6 \text{ cm}, c = 30.4 \text{ cm}, h = 17.7 \text{ cm}$
20	$a = g = 11.9 \text{ dm}, b = 39.7 \text{ dm}, c = 29.3 \text{ dm}, h = 16.5 \text{ dm}$

Vorgehensweise: Zur Ermittlung der fehlenden Größen beim allgemeinen Dreieck ist die obige Formelsammlung anzuwenden.

Lösungen:

Nr.	Gegeben:	Lösungen:
1	$a = g = 19.2 \text{ dm}, b = 14 \text{ dm}, c = 23 \text{ dm}, h = 14 \text{ dm}$	$u = 56.2 \text{ dm}, A = 134.4 \text{ dm}^2$
2	$a = g = 21.3 \text{ mm}, b = 20.1 \text{ mm}, c = 26.4 \text{ mm}, h = 19.7 \text{ mm}$	$u = 67.8 \text{ mm}, A = 209.8 \text{ mm}^2$
3	$a = g = 38.2 \text{ mm}, b = 19.8 \text{ mm}, c = 21.2 \text{ mm}, h = 7.4 \text{ mm}$	$u = 79.2 \text{ mm}, A = 141.3 \text{ mm}^2$
4	$a = g = 19.2 \text{ dm}, b = 18.8 \text{ dm}, c = 20.4 \text{ dm}, h = 17 \text{ dm}$	$u = 58.4 \text{ dm}, A = 163.2 \text{ dm}^2$
5	$a = g = 23.9 \text{ m}, b = 16.9 \text{ m}, c = 38.2 \text{ m}, h = 11.3 \text{ m}$	$u = 79 \text{ m}, A = 135 \text{ m}^2$
6	$a = g = 39.7 \text{ mm}, b = 23.2 \text{ mm}, c = 31.4 \text{ mm}, h = 18.3 \text{ mm}$	$u = 94.3 \text{ mm}, A = 363.3 \text{ mm}^2$
7	$a = g = 5.6 \text{ dm}, b = 33.4 \text{ dm}, c = 35.2 \text{ dm}, h = 32.4 \text{ dm}$	$u = 74.2 \text{ dm}, A = 90.7 \text{ dm}^2$
8	$a = g = 12.6 \text{ m}, b = 18.3 \text{ m}, c = 23.2 \text{ m}, h = 18.2 \text{ m}$	$u = 54.1 \text{ m}, A = 114.7 \text{ m}^2$
9	$a = g = 30.8 \text{ mm}, b = 34.2 \text{ mm}, c = 18.6 \text{ mm}, h = 18.5 \text{ mm}$	$u = 83.6 \text{ mm}, A = 284.9 \text{ mm}^2$
10	$a = g = 11.6 \text{ mm}, b = 15 \text{ mm}, c = 25.9 \text{ mm}, h = 6.7 \text{ mm}$	$u = 52.5 \text{ mm}, A = 38.9 \text{ mm}^2$
11	$a = g = 31.2 \text{ m}, b = 32.8 \text{ m}, c = 33.6 \text{ m}, h = 29.3 \text{ m}$	$u = 97.6 \text{ m}, A = 457.1 \text{ m}^2$
12	$a = g = 33.8 \text{ cm}, b = 20.6 \text{ cm}, c = 51.6 \text{ cm}, h = 12.7 \text{ cm}$	$u = 106 \text{ cm}, A = 214.6 \text{ cm}^2$
13	$a = g = 20.6 \text{ dm}, b = 17.6 \text{ dm}, c = 16.6 \text{ dm}, h = 13.6 \text{ dm}$	$u = 54.8 \text{ dm}, A = 140.1 \text{ dm}^2$
14	$a = g = 32.4 \text{ dm}, b = 14.5 \text{ dm}, c = 30.6 \text{ dm}, h = 13.6 \text{ dm}$	$u = 77.5 \text{ dm}, A = 220.3 \text{ dm}^2$
15	$a = g = 25.2 \text{ cm}, b = 30.4 \text{ cm}, c = 32.1 \text{ cm}, h = 28.5 \text{ cm}$	$u = 87.7 \text{ cm}, A = 359.1 \text{ cm}^2$
16	$a = g = 24.4 \text{ cm}, b = 28.4 \text{ cm}, c = 45.1 \text{ cm}, h = 25.3 \text{ cm}$	$u = 97.9 \text{ cm}, A = 308.7 \text{ cm}^2$
17	$a = g = 22.1 \text{ dm}, b = 18.2 \text{ dm}, c = 18.3 \text{ dm}, h = 14.5 \text{ dm}$	$u = 58.6 \text{ dm}, A = 160.2 \text{ dm}^2$
18	$a = g = 21 \text{ mm}, b = 38.2 \text{ mm}, c = 35.2 \text{ mm}, h = 34.8 \text{ mm}$	$u = 94.4 \text{ mm}, A = 365.4 \text{ mm}^2$
19	$a = g = 38.8 \text{ cm}, b = 22.6 \text{ cm}, c = 30.4 \text{ cm}, h = 17.7 \text{ cm}$	$u = 91.8 \text{ cm}, A = 343.4 \text{ cm}^2$
20	$a = g = 11.9 \text{ dm}, b = 39.7 \text{ dm}, c = 29.3 \text{ dm}, h = 16.5 \text{ dm}$	$u = 80.9 \text{ dm}, A = 98.2 \text{ dm}^2$

Aufgabe 7: Berechne Umfang und Flächeninhalt des allgemeinen Dreiecks (Seiten a, b, c , Grundseite $g = a$, Höhe h , $u =$ Umfang, $A =$ Flächeninhalt).

Nr.	Gegeben:
1	$a = g = 34.9 \text{ dm}, b = 32.6 \text{ dm}, c = 15.2 \text{ dm}, h = 14.2 \text{ dm}$
2	$a = g = 49 \text{ cm}, b = 12.9 \text{ cm}, c = 45.9 \text{ cm}, h = 12 \text{ cm}$

3	$a = g = 15.1 \text{ mm}, b = 6.3 \text{ mm}, c = 17.8 \text{ mm}, h = 6.1 \text{ mm}$
4	$a = g = 35 \text{ mm}, b = 30.8 \text{ mm}, c = 58.1 \text{ mm}, h = 25.6 \text{ mm}$
5	$a = g = 27.8 \text{ cm}, b = 19.1 \text{ cm}, c = 13.3 \text{ cm}, h = 8.1 \text{ cm}$
6	$a = g = 14.1 \text{ mm}, b = 35.1 \text{ mm}, c = 35.7 \text{ mm}, h = 34.7 \text{ mm}$
7	$a = g = 14 \text{ cm}, b = 14.2 \text{ cm}, c = 7.9 \text{ cm}, h = 7.6 \text{ cm}$
8	$a = g = 41.5 \text{ cm}, b = 38.3 \text{ cm}, c = 57.8 \text{ cm}, h = 38.3 \text{ cm}$
9	$a = g = 37.9 \text{ cm}, b = 43.1 \text{ cm}, c = 66.8 \text{ cm}, h = 40.3 \text{ cm}$
10	$a = g = 32.6 \text{ mm}, b = 23.6 \text{ mm}, c = 33.6 \text{ mm}, h = 22.4 \text{ mm}$
11	$a = g = 6.7 \text{ cm}, b = 34.1 \text{ cm}, c = 36.4 \text{ cm}, h = 33 \text{ cm}$
12	$a = g = 10.7 \text{ m}, b = 49.2 \text{ m}, c = 58 \text{ m}, h = 30.3 \text{ m}$
13	$a = g = 36.5 \text{ mm}, b = 9.6 \text{ mm}, c = 31.8 \text{ mm}, h = 7.8 \text{ mm}$
14	$a = g = 25.3 \text{ mm}, b = 38.3 \text{ mm}, c = 57.3 \text{ mm}, h = 30.4 \text{ mm}$
15	$a = g = 8.3 \text{ dm}, b = 20.4 \text{ dm}, c = 26.8 \text{ dm}, h = 14.8 \text{ dm}$
16	$a = g = 6.9 \text{ mm}, b = 45.3 \text{ mm}, c = 42.7 \text{ mm}, h = 40.6 \text{ mm}$
17	$a = g = 27.6 \text{ dm}, b = 47.4 \text{ dm}, c = 21.5 \text{ dm}, h = 10.9 \text{ dm}$
18	$a = g = 39.9 \text{ mm}, b = 21.8 \text{ mm}, c = 25.4 \text{ mm}, h = 12.6 \text{ mm}$
19	$a = g = 44.2 \text{ m}, b = 45.8 \text{ m}, c = 45.5 \text{ m}, h = 39.9 \text{ m}$
20	$a = g = 26.8 \text{ mm}, b = 18.8 \text{ mm}, c = 23.8 \text{ mm}, h = 16.3 \text{ mm}$

Vorgehensweise: Zur Ermittlung der fehlenden Größen beim allgemeinen Dreieck ist die obige Formelsammlung anzuwenden.

Lösungen:

Nr.	Gegeben:	Lösungen:
1	$a = g = 34.9 \text{ dm}, b = 32.6 \text{ dm}, c = 15.2 \text{ dm}, h = 14.2 \text{ dm}$	$u = 82.7 \text{ dm}, A = 247.8 \text{ dm}^2$
2	$a = g = 49 \text{ cm}, b = 12.9 \text{ cm}, c = 45.9 \text{ cm}, h = 12 \text{ cm}$	$u = 107.8 \text{ cm}, A = 294 \text{ cm}^2$
3	$a = g = 15.1 \text{ mm}, b = 6.3 \text{ mm}, c = 17.8 \text{ mm}, h = 6.1 \text{ mm}$	$u = 39.2 \text{ mm}, A = 46.1 \text{ mm}^2$
4	$a = g = 35 \text{ mm}, b = 30.8 \text{ mm}, c = 58.1 \text{ mm}, h = 25.6 \text{ mm}$	$u = 123.9 \text{ mm}, A = 448 \text{ mm}^2$
5	$a = g = 27.8 \text{ cm}, b = 19.1 \text{ cm}, c = 13.3 \text{ cm}, h = 8.1 \text{ cm}$	$u = 60.2 \text{ cm}, A = 112.6 \text{ cm}^2$
6	$a = g = 14.1 \text{ mm}, b = 35.1 \text{ mm}, c = 35.7 \text{ mm}, h = 34.7 \text{ mm}$	$u = 84.9 \text{ mm}, A = 244.6 \text{ mm}^2$
7	$a = g = 14 \text{ cm}, b = 14.2 \text{ cm}, c = 7.9 \text{ cm}, h = 7.6 \text{ cm}$	$u = 36.1 \text{ cm}, A = 53.2 \text{ cm}^2$
8	$a = g = 41.5 \text{ cm}, b = 38.3 \text{ cm}, c = 57.8 \text{ cm}, h = 38.3 \text{ cm}$	$u = 137.6 \text{ cm}, A = 794.7 \text{ cm}^2$
9	$a = g = 37.9 \text{ cm}, b = 43.1 \text{ cm}, c = 66.8 \text{ cm}, h = 40.3 \text{ cm}$	$u = 147.8 \text{ cm}, A = 763.7 \text{ cm}^2$
10	$a = g = 32.6 \text{ mm}, b = 23.6 \text{ mm}, c = 33.6 \text{ mm}, h = 22.4 \text{ mm}$	$u = 89.8 \text{ mm}, A = 365.1 \text{ mm}^2$
11	$a = g = 6.7 \text{ cm}, b = 34.1 \text{ cm}, c = 36.4 \text{ cm}, h = 33 \text{ cm}$	$u = 77.2 \text{ cm}, A = 110.6 \text{ cm}^2$
12	$a = g = 10.7 \text{ m}, b = 49.2 \text{ m}, c = 58 \text{ m}, h = 30.3 \text{ m}$	$u = 117.9 \text{ m}, A = 162.1 \text{ m}^2$
13	$a = g = 36.5 \text{ mm}, b = 9.6 \text{ mm}, c = 31.8 \text{ mm}, h = 7.8 \text{ mm}$	$u = 77.9 \text{ mm}, A = 142.4 \text{ mm}^2$
14	$a = g = 25.3 \text{ mm}, b = 38.3 \text{ mm}, c = 57.3 \text{ mm}, h = 30.4 \text{ mm}$	$u = 120.9 \text{ mm}, A = 384.6 \text{ mm}^2$
15	$a = g = 8.3 \text{ dm}, b = 20.4 \text{ dm}, c = 26.8 \text{ dm}, h = 14.8 \text{ dm}$	$u = 55.5 \text{ dm}, A = 61.4 \text{ dm}^2$
16	$a = g = 6.9 \text{ mm}, b = 45.3 \text{ mm}, c = 42.7 \text{ mm}, h = 40.6 \text{ mm}$	$u = 94.9 \text{ mm}, A = 140.1 \text{ mm}^2$
17	$a = g = 27.6 \text{ dm}, b = 47.4 \text{ dm}, c = 21.5 \text{ dm}, h = 10.9 \text{ dm}$	$u = 96.5 \text{ dm}, A = 150.4 \text{ dm}^2$
18	$a = g = 39.9 \text{ mm}, b = 21.8 \text{ mm}, c = 25.4 \text{ mm}, h = 12.6 \text{ mm}$	$u = 87.1 \text{ mm}, A = 251.4 \text{ mm}^2$
19	$a = g = 44.2 \text{ m}, b = 45.8 \text{ m}, c = 45.5 \text{ m}, h = 39.9 \text{ m}$	$u = 135.5 \text{ m}, A = 881.8 \text{ m}^2$
20	$a = g = 26.8 \text{ mm}, b = 18.8 \text{ mm}, c = 23.8 \text{ mm}, h = 16.3 \text{ mm}$	$u = 69.4 \text{ mm}, A = 218.4 \text{ mm}^2$

Aufgabe 8: Berechne Umfang und Flächeninhalt des allgemeinen Dreiecks (Seiten a, b, c, Grundseite g = a, Höhe h, u = Umfang, A = Flächeninhalt).

Nr.	Gegeben:
1	a = g = 77.7 mm, b = 21.2 mm, c = 61.5 mm, h = 12.1 mm
2	a = g = 50.3 dm, b = 45.7 dm, c = 28.9 dm, h = 26 dm
3	a = g = 57.3 mm, b = 74.2 mm, c = 122.2 mm, h = 51.3 mm
4	a = g = 49.2 cm, b = 59.9 cm, c = 86.5 cm, h = 58 cm
5	a = g = 44.1 cm, b = 25.8 cm, c = 59.7 cm, h = 23.4 cm
6	a = g = 23.5 m, b = 36.6 m, c = 41.5 m, h = 36.4 m
7	a = g = 43.8 m, b = 41 m, c = 37.7 m, h = 32.6 m
8	a = g = 56.9 mm, b = 73.5 mm, c = 122.8 mm, h = 46.9 mm
9	a = g = 14.8 dm, b = 57.3 dm, c = 43.6 dm, h = 18.9 dm
10	a = g = 46.8 cm, b = 84.9 cm, c = 113.8 cm, h = 75.9 cm
11	a = g = 17.8 m, b = 63.9 m, c = 56.9 m, h = 54.9 m
12	a = g = 12.4 mm, b = 51.6 mm, c = 41.7 mm, h = 27.8 mm
13	a = g = 33 dm, b = 40.3 dm, c = 73.1 dm, h = 6 dm
14	a = g = 13.7 cm, b = 87 cm, c = 93.5 cm, h = 79.2 cm
15	a = g = 10.2 m, b = 44.4 m, c = 43.1 m, h = 43.1 m
16	a = g = 41.6 dm, b = 87.3 dm, c = 92.3 dm, h = 86.7 dm
17	a = g = 70.7 m, b = 36.1 m, c = 64.2 m, h = 32.6 m
18	a = g = 19.4 dm, b = 49.2 dm, c = 36.8 dm, h = 32.2 dm
19	a = g = 11.6 mm, b = 77.5 mm, c = 75.8 mm, h = 75.6 mm
20	a = g = 76.1 m, b = 98 m, c = 53.9 m, h = 53.6 m

Vorgehensweise: Zur Ermittlung der fehlenden Größen beim allgemeinen Dreieck ist die obige Formelsammlung anzuwenden.

Lösungen:

Nr.	Gegeben:	Lösungen:
1	a = g = 77.7 mm, b = 21.2 mm, c = 61.5 mm, h = 12.1 mm	u = 160.4 mm, A = 470.1 mm ²
2	a = g = 50.3 dm, b = 45.7 dm, c = 28.9 dm, h = 26 dm	u = 124.9 dm, A = 653.9 dm ²
3	a = g = 57.3 mm, b = 74.2 mm, c = 122.2 mm, h = 51.3 mm	u = 253.7 mm, A = 1469.7 mm ²
4	a = g = 49.2 cm, b = 59.9 cm, c = 86.5 cm, h = 58 cm	u = 195.6 cm, A = 1426.8 cm ²
5	a = g = 44.1 cm, b = 25.8 cm, c = 59.7 cm, h = 23.4 cm	u = 129.6 cm, A = 516 cm ²
6	a = g = 23.5 m, b = 36.6 m, c = 41.5 m, h = 36.4 m	u = 101.6 m, A = 427.7 m ²
7	a = g = 43.8 m, b = 41 m, c = 37.7 m, h = 32.6 m	u = 122.5 m, A = 713.9 m ²
8	a = g = 56.9 mm, b = 73.5 mm, c = 122.8 mm, h = 46.9 mm	u = 253.2 mm, A = 1334.3 mm ²
9	a = g = 14.8 dm, b = 57.3 dm, c = 43.6 dm, h = 18.9 dm	u = 115.7 dm, A = 139.9 dm ²
10	a = g = 46.8 cm, b = 84.9 cm, c = 113.8 cm, h = 75.9 cm	u = 245.5 cm, A = 1776.1 cm ²
11	a = g = 17.8 m, b = 63.9 m, c = 56.9 m, h = 54.9 m	u = 138.6 m, A = 488.6 m ²
12	a = g = 12.4 mm, b = 51.6 mm, c = 41.7 mm, h = 27.8 mm	u = 105.7 mm, A = 172.4 mm ²
13	a = g = 33 dm, b = 40.3 dm, c = 73.1 dm, h = 6 dm	u = 146.4 dm, A = 99 dm ²
14	a = g = 13.7 cm, b = 87 cm, c = 93.5 cm, h = 79.2 cm	u = 194.2 cm, A = 542.5 cm ²

15	$a = g = 10.2 \text{ m}, b = 44.4 \text{ m}, c = 43.1 \text{ m}, h = 43.1 \text{ m}$	$u = 97.7 \text{ m}, A = 219.8 \text{ m}^2$
16	$a = g = 41.6 \text{ dm}, b = 87.3 \text{ dm}, c = 92.3 \text{ dm}, h = 86.7 \text{ dm}$	$u = 221.2 \text{ dm}, A = 1803.4 \text{ dm}^2$
17	$a = g = 70.7 \text{ m}, b = 36.1 \text{ m}, c = 64.2 \text{ m}, h = 32.6 \text{ m}$	$u = 171 \text{ m}, A = 1152.4 \text{ m}^2$
18	$a = g = 19.4 \text{ dm}, b = 49.2 \text{ dm}, c = 36.8 \text{ dm}, h = 32.2 \text{ dm}$	$u = 105.4 \text{ dm}, A = 312.3 \text{ dm}^2$
19	$a = g = 11.6 \text{ mm}, b = 77.5 \text{ mm}, c = 75.8 \text{ mm}, h = 75.6 \text{ mm}$	$u = 164.9 \text{ mm}, A = 438.5 \text{ mm}^2$
20	$a = g = 76.1 \text{ m}, b = 98 \text{ m}, c = 53.9 \text{ m}, h = 53.6 \text{ m}$	$u = 228 \text{ m}, A = 2039.5 \text{ m}^2$

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