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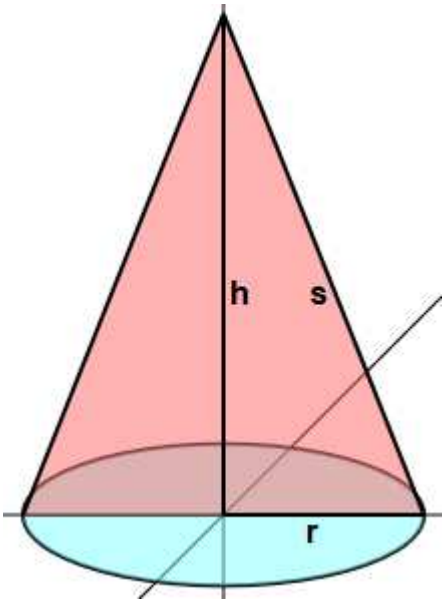
Mathematik-Aufgabenpool
> Kegelberechnung I

Einleitung: Ein (gerader) Kegel mit einem Kreis als Grundfläche ist durch den Radius r des Kreises mit Durchmesser d und Kreisumfang u sowie durch die Kegelhöhe h bestimmt, weiter durch die Mantellinie s, durch die Grundfläche G, die Oberfläche O, die Mantelfläche M und das Volumen V. Es gilt: d=2r, u=2πr, s=$\sqrt{r^2+h^2}$, G=πr², M=πrs, O=G+M, V=Gh/3.



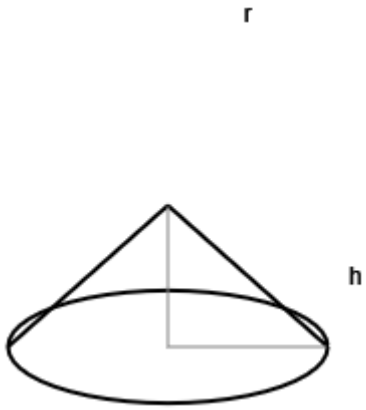
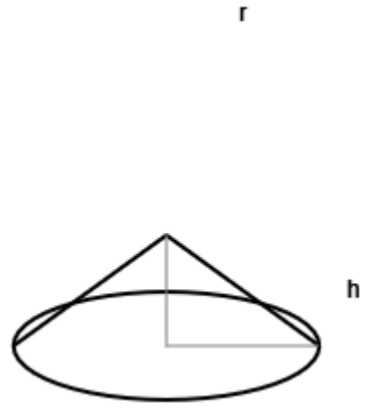
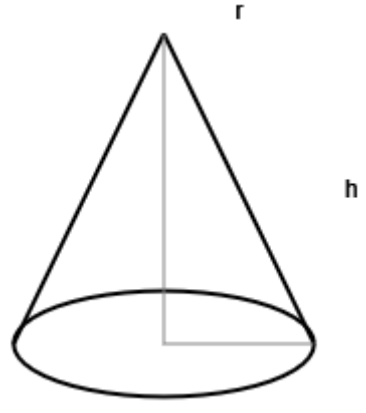
Kegel: Radius r, Höhe h, Mantellinie s

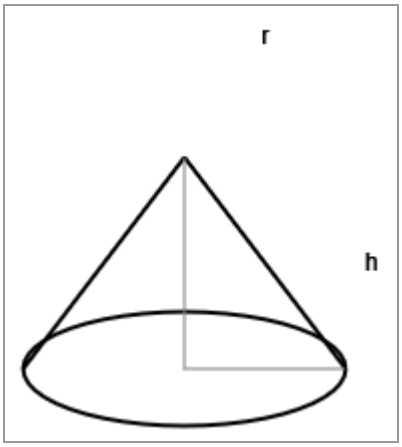
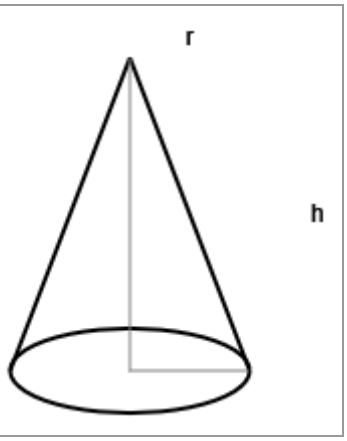
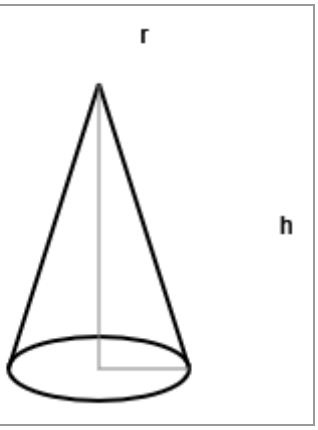
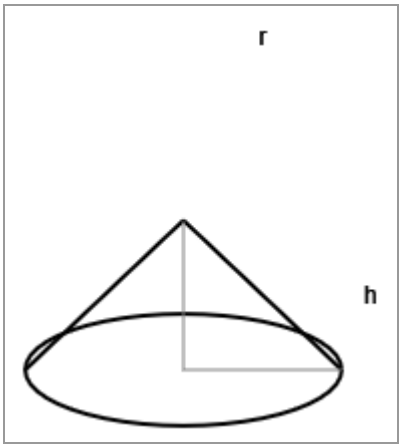
Formelsammlung:

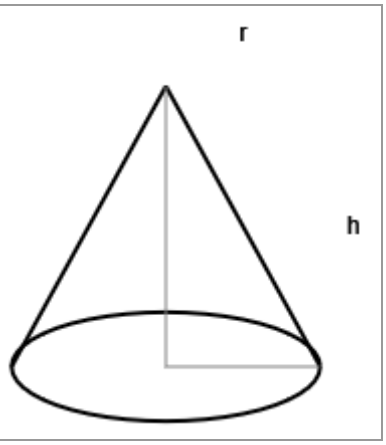
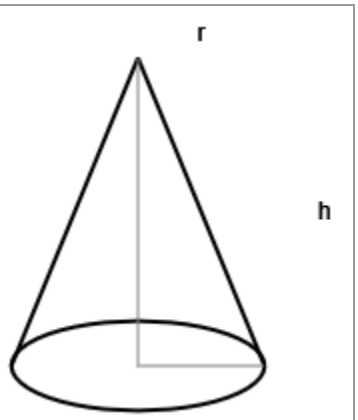
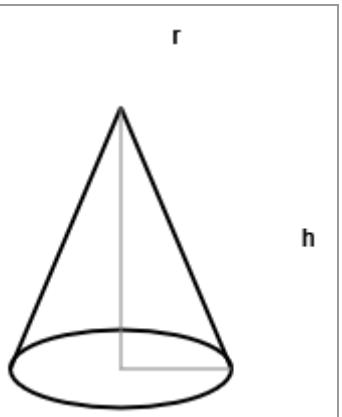
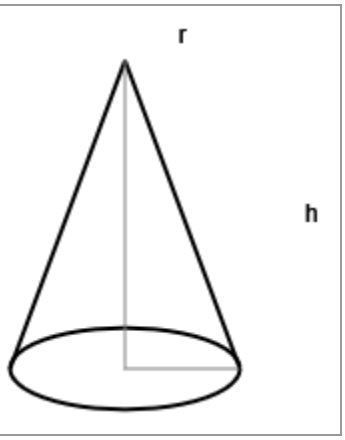
Grundfläche, Radius	$G=\pi r^2$	$r=\sqrt{\frac{G}{\pi}}$	
Durchmesser	$d=2r$	$r=\frac{d}{2}$	
Kreisumfang	$U=2\pi r$	$U=\pi d$	$r=\frac{U}{2\pi}$
Mantellinie, Höhe	$s^2=r^2+h^2$	$r^2=s^2-h^2$	$h^2=s^2-r^2$
Mantelfläche	$M=\pi rs$	$r=\frac{M}{\pi s}$	$s=\frac{M}{\pi r}$
Oberfläche	$O=G+M=\pi r^2+\pi rs=\pi r(r+s)$		
	$G=O-M$	$M=O-G$	
		$r=-\frac{s}{2}+\sqrt{\frac{s^2}{4}+\frac{O}{\pi}}$	$s=\frac{O}{\pi r}-r$
Volumen	$V=\frac{1}{3}G\cdot h=\frac{1}{3}\pi r^2h$	$r=\sqrt{\frac{3V}{\pi h}}$	$h=\frac{3V}{\pi r^2}$
Winkel zwischen Mantel- und Grundfläche	$\sin\alpha=\frac{h}{s}$	$\cos\alpha=\frac{r}{s}$	$\tan\alpha=\frac{h}{r}$

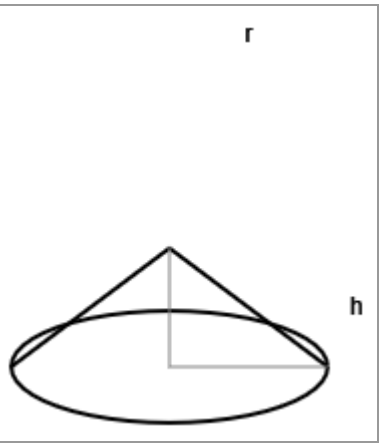
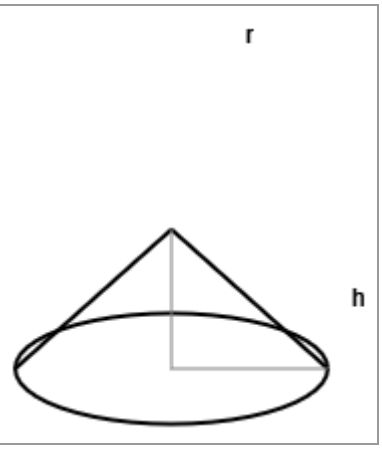
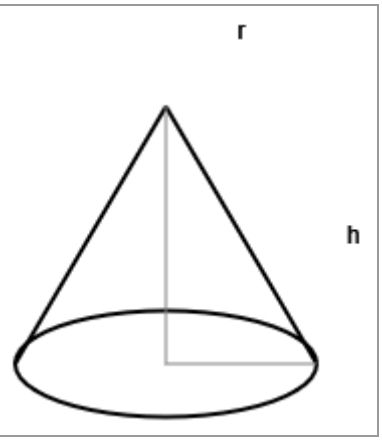
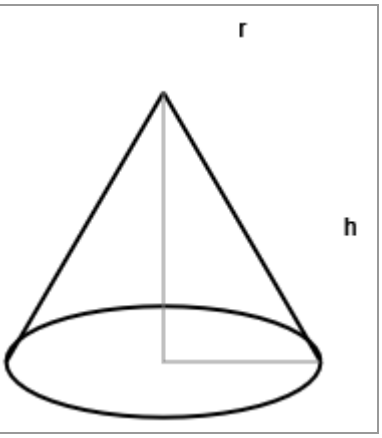
Halber Winkel in der Kegelspitze	$\sin\beta = \frac{r}{s}$	$\cos\beta = \frac{h}{s}$	$\tan\beta = \frac{r}{h}$
Kreisbogen	$b = 2\pi r$	$b = \pi s \cdot \frac{\gamma}{180°}$	$s = b \cdot \frac{180°}{\pi \cdot \gamma}$
Abrollfläche, Kreisausschnitt	$A = M = \pi r s$	$A = \pi s^2 \cdot \frac{\gamma}{360°}$	
Abrollwinkel	$\gamma = \frac{b}{\pi s} \cdot 180°$	$\gamma = \frac{A}{\pi s^2} \cdot 360°$	$\gamma = \frac{r}{s} \cdot 360°$

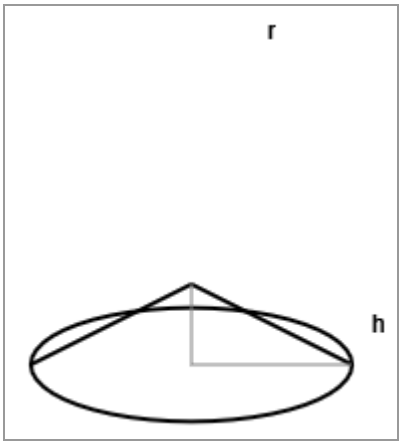
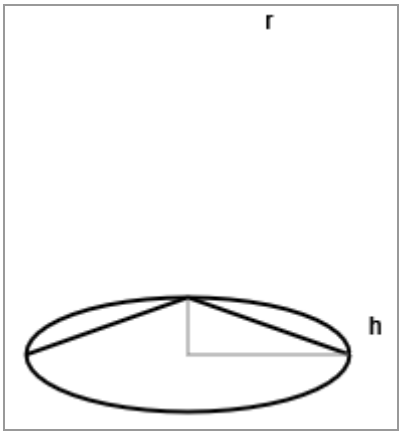
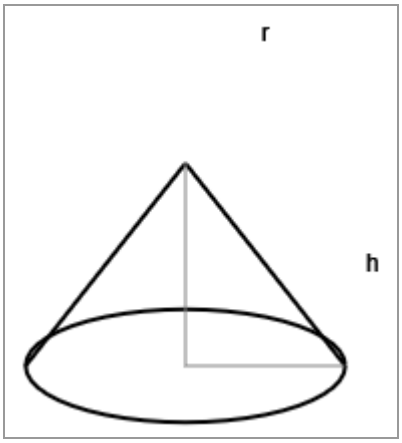
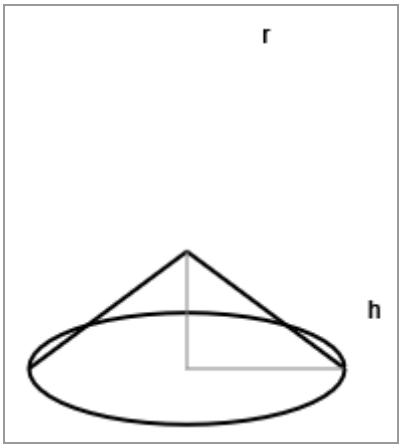
Aufgabe 1: Bestimme mit vorgegebenem Radius r und vorgegebener Höhe h den Durchmesser d, den Umfang u, die Mantellinie s, die Grundfläche G, die Mantelfläche M, die Oberfläche O und das Volumen V des Kegels.

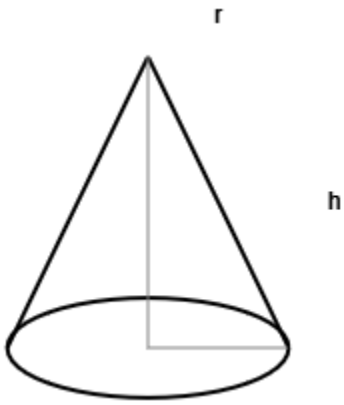
Nr.	*Gegeben*:	*Gesucht*:	*Grafik*:
1	r = 13.3 cm, h = 11.8 cm	d, u, G, s, M, O, V	
2	r = 10.5 cm, h = 7.6 cm	d, u, G, s, M, O, V	
3	r = 7.2 cm, h = 14.9 cm	d, u, G, s, M, O, V	

4	r = 14.4 cm, h = 18.9 cm	d, u, G, s, M, O, V	
5	r = 7.5 cm, h = 19.6 cm	d, u, G, s, M, O, V	
6	r = 3.8 cm, h = 12.0 cm	d, u, G, s, M, O, V	
7	r = 14.6 cm, h = 13.8 cm	d, u, G, s, M, O, V	

8	r = 8.3 cm, h = 15.1 cm	d, u, G, s, M, O, V	
9	r = 6.1 cm, h = 14.8 cm	d, u, G, s, M, O, V	
10	r = 2.7 cm, h = 6.4 cm	d, u, G, s, M, O, V	
11	r = 6.9 cm, h = 18.4 cm	d, u, G, s, M, O, V	

12	r = 13.2 cm, h = 9.9 cm	d, u, G, s, M, O, V	
13	r = 13.5 cm, h = 12.0 cm	d, u, G, s, M, O, V	
14	r = 9.0 cm, h = 15.4 cm	d, u, G, s, M, O, V	
15	r = 10.8 cm, h = 18.5 cm	d, u, G, s, M, O, V	

16	r = 13.4 cm, h = 6.7 cm	d, u, G, s, M, O, V	
17	r = 14.4 cm, h = 5.1 cm	d, u, G, s, M, O, V	
18	r = 13.8 cm, h = 17.5 cm	d, u, G, s, M, O, V	
19	r = 13.6 cm, h = 10.1 cm	d, u, G, s, M, O, V	

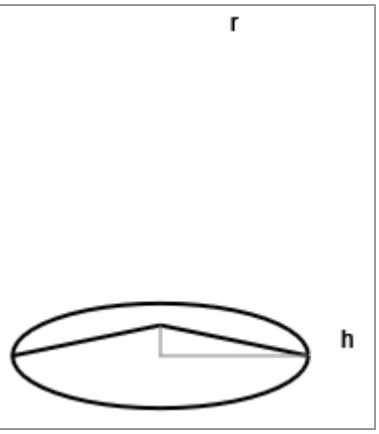
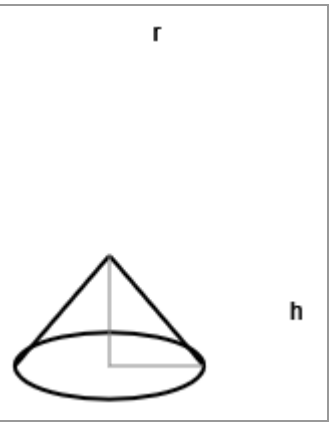
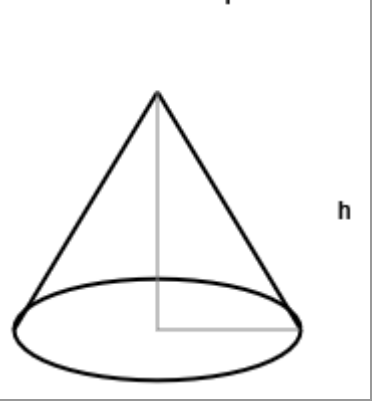
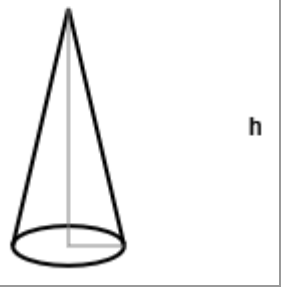
20	r = 4.7 cm, h = 9.7 cm	d, u, G, s, M, O, V	

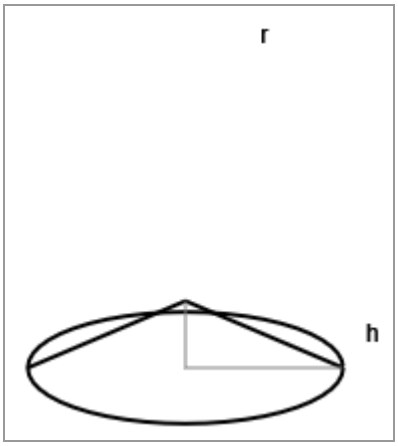
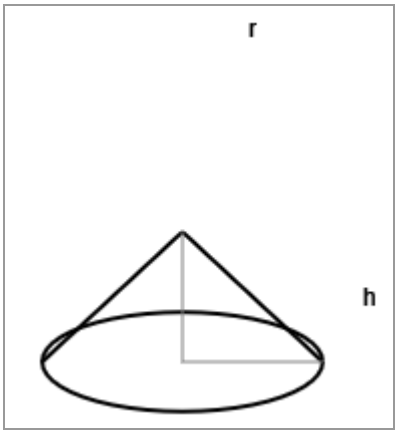
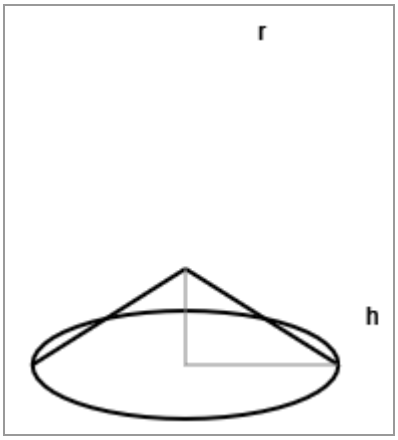
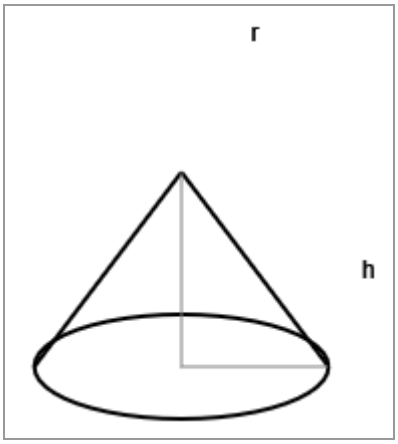
Vorgehensweise: Zur Ermittlung der fehlenden Größen beim Kegel ist die obige Formelsammlung anzuwenden.

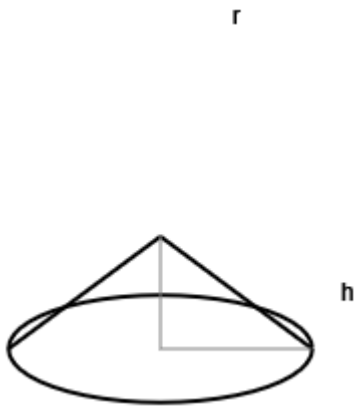
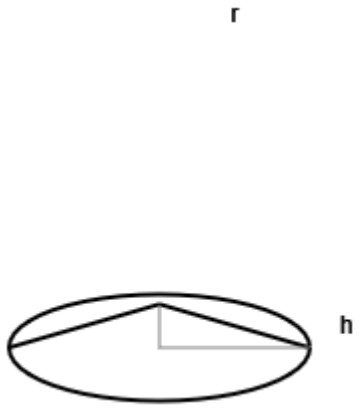
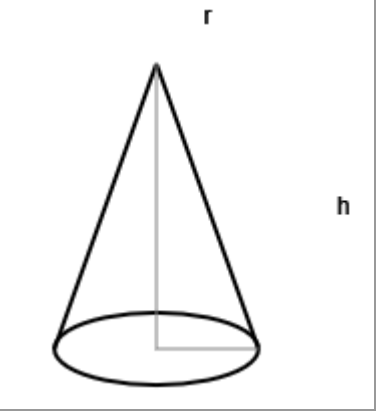
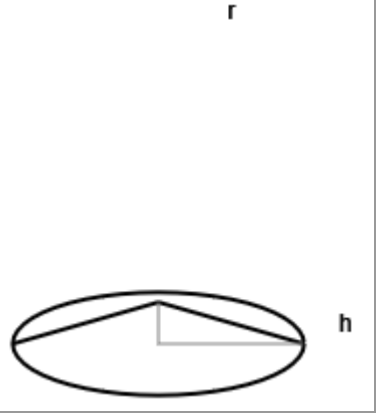
Lösungen:

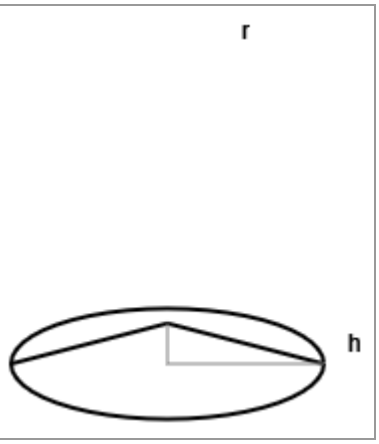
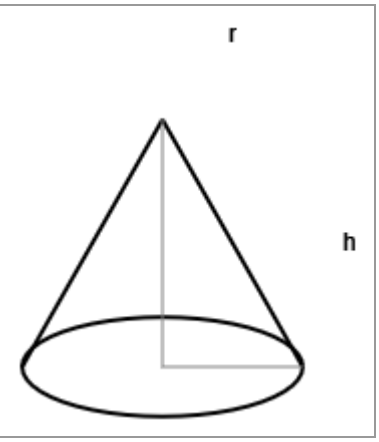
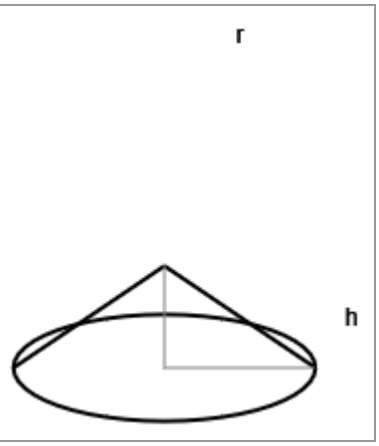
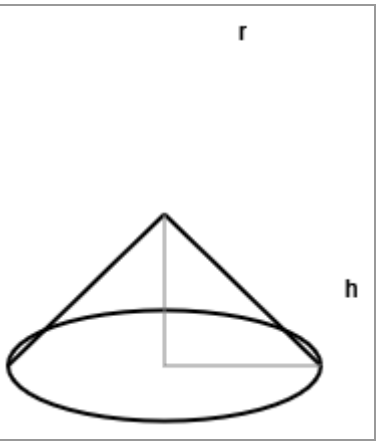
Nr.	r=	d=	u=	G=	h=	s=	M=	O=	V=
1	13.3 cm	26.6 cm	83.6 cm	555.7 cm^2	11.8 cm	17.8 cm	743.7 cm^2	1299.4 cm^2	2185.8 cm^3
2	10.5 cm	21.0 cm	66.0 cm	346.4 cm^2	7.6 cm	13.0 cm	428.8 cm^2	775.2 cm^2	877.4 cm^3
3	7.2 cm	14.4 cm	45.2 cm	162.9 cm^2	14.9 cm	16.5 cm	373.2 cm^2	536.1 cm^2	808.9 cm^3
4	14.4 cm	28.8 cm	90.5 cm	651.4 cm^2	18.9 cm	23.8 cm	1076.7 cm^2	1728.1 cm^2	4104.1 cm^3
5	7.5 cm	15.0 cm	47.1 cm	176.7 cm^2	19.6 cm	21.0 cm	494.8 cm^2	671.5 cm^2	1154.5 cm^3
6	3.8 cm	7.6 cm	23.9 cm	45.4 cm^2	12.0 cm	12.6 cm	150.4 cm^2	195.8 cm^2	181.5 cm^3
7	14.6 cm	29.2 cm	91.7 cm	669.7 cm^2	13.8 cm	20.1 cm	921.9 cm^2	1591.6 cm^2	3080.4 cm^3
8	8.3 cm	16.6 cm	52.2 cm	216.4 cm^2	15.1 cm	17.2 cm	448.5 cm^2	664.9 cm^2	1089.3 cm^3
9	6.1 cm	12.2 cm	38.3 cm	116.9 cm^2	14.8 cm	16.0 cm	306.6 cm^2	423.5 cm^2	576.7 cm^3
10	2.7 cm	5.4 cm	17.0 cm	22.9 cm^2	6.4 cm	6.9 cm	58.8 cm^2	81.4 cm^2	48.9 cm^3
11	6.9 cm	13.8 cm	43.4 cm	149.6 cm^2	18.4 cm	19.7 cm	427.0 cm^2	576.6 cm^2	917.4 cm^3
12	13.2 cm	26.4 cm	82.9 cm	547.4 cm^2	9.9 cm	16.5 cm	684.2 cm^2	1231.6 cm^2	1806.4 cm^3
13	13.5 cm	27.0 cm	84.8 cm	572.6 cm^2	12.0 cm	18.1 cm	767.6 cm^2	1340.2 cm^2	2290.2 cm^3
14	9.0 cm	18.0 cm	56.5 cm	254.5 cm^2	15.4 cm	17.8 cm	503.3 cm^2	757.8 cm^2	1306.3 cm^3
15	10.8 cm	21.6 cm	67.9 cm	366.4 cm^2	18.5 cm	21.4 cm	726.1 cm^2	1092.5 cm^2	2259.7 cm^3
16	13.4 cm	26.8 cm	84.2 cm	564.1 cm^2	6.7 cm	15.0 cm	631.5 cm^2	1195.6 cm^2	1259.8 cm^3
17	14.4 cm	28.8 cm	90.5 cm	651.4 cm^2	5.1 cm	15.3 cm	692.2 cm^2	1343.6 cm^2	1107.4 cm^3
18	13.8 cm	27.6 cm	86.7 cm	598.3 cm^2	17.5 cm	22.3 cm	966.8 cm^2	1565.1 cm^2	3490.0 cm^3
19	13.6 cm	27.2 cm	85.5 cm	581.1 cm^2	10.1 cm	16.9 cm	722.1 cm^2	1302.2 cm^2	1956.3 cm^3
20	4.7 cm	9.4 cm	29.5 cm	69.4 cm^2	9.7 cm	10.8 cm	159.5 cm^2	228.9 cm^2	224.4 cm^3

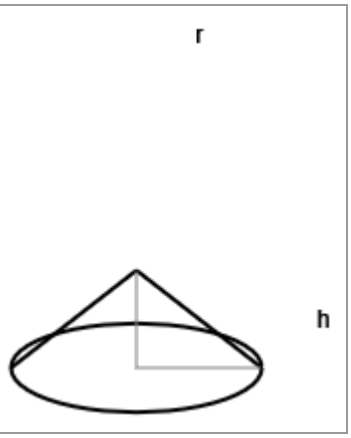
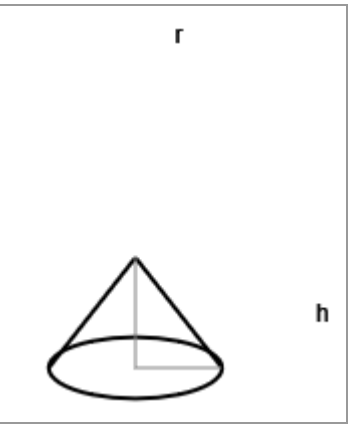
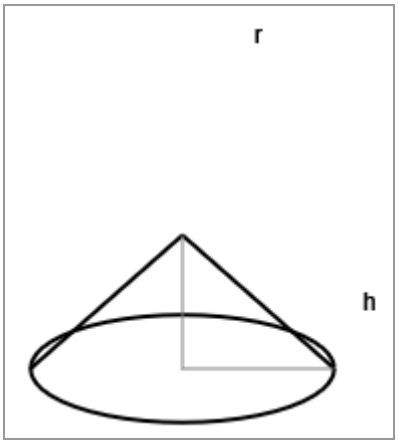
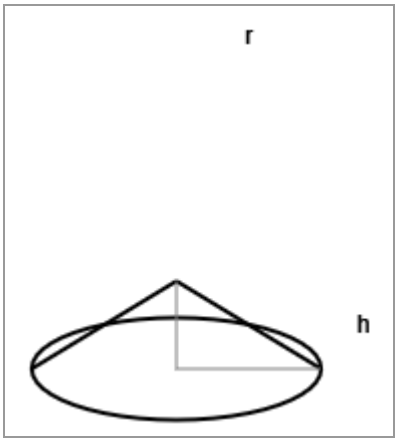
Aufgabe 2: Bestimme die fehlenden Größen (Radius r, Durchmesser d, Umfang u, Mantellinie s, Grundfläche G, Mantelfläche M, Oberfläche O, Volumen V) des Kegels.

Nr.	*Gegeben*:	*Gesucht*:	*Grafik*:
1	h = 1.2 cm, O = 320.7 cm^2	r, d, u, G, s, M, V	
2	u = 7.5 cm, s = 1.8 cm	r, d, G, h, M, O, V	
3	d = 10.4 cm, O = 411.6 cm^2	r, u, G, h, s, M, V	
4	d = 2.4 cm, s = 5.2 cm	r, u, G, h, M, O, V	

5	d = 19.8 cm, V = 431.1 cm^3	r, u, G, h, s, M, O	
6	G = 95.0 cm^2, O = 354.2 cm^2	r, d, u, h, s, M, V	
7	u = 49.0 cm, h = 4.9 cm	r, d, G, s, M, O, V	
8	u = 47.1 cm, M = 584.3 cm^2	r, d, G, h, s, O, V	

9	r = 7.3 cm, s = 9.1 cm	d, u, G, h, M, O, V	
10	u = 37.1 cm, h = 1.7 cm	r, d, G, s, M, O, V	
11	u = 21.4 cm, V = 115.0 cm^3	r, d, G, h, s, M, O	
12	u = 44.0 cm, M = 321.1 cm^2	r, d, G, h, s, O, V	

13	M = 514.5 cm^2, O = 763.3 cm^2	r, d, u, G, h, s, V	
14	r = 5.5 cm, s = 11.2 cm	d, u, G, h, M, O, V	
15	r = 7.7 cm, s = 9.3 cm	d, u, G, h, M, O, V	
16	d = 17.8 cm, s = 12.4 cm	r, u, G, h, M, O, V	

17	s = 3.4 cm, M = 57.7 cm^2	r, d, u, G, h, O, V	
18	r = 1.1 cm, s = 1.8 cm	d, u, G, h, M, O, V	
19	s = 9.7 cm, G = 167.4 cm^2	r, d, u, h, M, O, V	
20	d = 12.2 cm, s = 7.1 cm	r, u, G, h, M, O, V	

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

Lösungen:

Nr.	r=	d=	u=	G=	h=	s=	M=	O=	V=
1	5.8 cm	11.6 cm	36.4 cm	105.7 cm^2	1.2 cm	5.9 cm	107.5 cm^2	213.2 cm^2	42.3 cm^3
2	1.2 cm	2.4 cm	7.5 cm	4.5 cm^2	1.4 cm	1.8 cm	6.8 cm^2	11.3 cm^2	2.1 cm^3

3	5.2 cm	10.4 cm	32.7 cm	84.9 cm^2	8.6 cm	10.0 cm	163.4 cm^2	248.3 cm^2	243.5 cm^3
4	1.2 cm	2.4 cm	7.5 cm	4.5 cm^2	5.1 cm	5.2 cm	19.6 cm^2	14.1 cm^2	7.7 cm^3
5	9.9 cm	19.8 cm	62.2 cm	307.9 cm^2	4.2 cm	10.8 cm	335.9 cm^2	643.8 cm^2	431.1 cm^3
6	5.5 cm	11.0 cm	34.6 cm	95.0 cm^2	5.1 cm	7.5 cm	129.6 cm^2	224.6 cm^2	161.6 cm^3
7	7.8 cm	15.6 cm	49.0 cm	191.1 cm^2	4.9 cm	9.2 cm	225.4 cm^2	416.5 cm^2	312.2 cm^3
8	7.5 cm	15.0 cm	47.1 cm	176.7 cm^2	9.9 cm	12.4 cm	292.2 cm^2	468.9 cm^2	583.2 cm^3
9	7.3 cm	14.6 cm	45.9 cm	167.4 cm^2	5.4 cm	9.1 cm	208.7 cm^2	376.1 cm^2	301.3 cm^3
10	5.9 cm	11.8 cm	37.1 cm	109.4 cm^2	1.7 cm	6.1 cm	113.1 cm^2	222.5 cm^2	62.0 cm^3
11	3.4 cm	6.8 cm	21.4 cm	36.3 cm^2	9.5 cm	10.1 cm	107.9 cm^2	144.2 cm^2	115.0 cm^3
12	7.0 cm	14.0 cm	44.0 cm	153.9 cm^2	2.0 cm	7.3 cm	160.5 cm^2	314.4 cm^2	102.6 cm^3
13	8.9 cm	17.8 cm	55.9 cm	248.8 cm^2	2.3 cm	9.2 cm	257.2 cm^2	506.0 cm^2	190.8 cm^3
14	5.5 cm	11.0 cm	34.6 cm	95.0 cm^2	9.7 cm	11.2 cm	193.5 cm^2	288.5 cm^2	307.3 cm^3
15	7.7 cm	15.4 cm	48.4 cm	186.3 cm^2	5.2 cm	9.3 cm	225.0 cm^2	411.3 cm^2	322.9 cm^3
16	8.9 cm	17.8 cm	55.9 cm	248.8 cm^2	8.6 cm	12.4 cm	346.7 cm^2	595.5 cm^2	713.4 cm^3
17	2.7 cm	5.4 cm	17.0 cm	22.9 cm^2	2.1 cm	3.4 cm	28.8 cm^2	51.7 cm^2	16.0 cm^3
18	1.1 cm	2.2 cm	6.9 cm	3.8 cm^2	1.4 cm	1.8 cm	6.2 cm^2	10.0 cm^2	1.8 cm^3
19	7.3 cm	14.6 cm	45.9 cm	167.4 cm^2	6.4 cm	9.7 cm	222.5 cm^2	389.9 cm^2	357.2 cm^3
20	6.1 cm	12.2 cm	38.3 cm	116.9 cm^2	3.7 cm	7.1 cm	136.1 cm^2	253.0 cm^2	144.2 cm^3

Aufgabe 3: Bestimme die fehlenden Größen (Radius r, Durchmesser d, Umfang u, Mantellinie s, Grundfläche G, Mantelfläche M, Oberfläche O, Volumen V) des Kegels.

Nr.	*Gegeben*:	*Gesucht*:
1	M = 158.8 dm^2, V = 197.3 dm^3	r, d, u, G, h, s, O
2	d = 14.2 mm, s = 7.2 mm	r, u, G, h, M, O, V
3	s = 9.2 cm, O = 393.5 cm^2	r, d, u, G, h, M, V
4	d = 18.2 dm, h = 9.7 dm	r, u, G, s, M, O, V
5	h = 9.4 mm, M = 426.1 mm^2	r, d, u, G, s, O, V
6	M = 242.6 mm^2, V = 442.5 mm^3	r, d, u, G, h, s, O
7	r = 3.2 m, M = 60.3 m^2	d, u, G, h, s, O, V
8	d = 6.4 m, s = 9.9 m	r, u, G, h, M, O, V
9	h = 3.9 cm, O = 55.7 cm^2	r, d, u, G, s, M, V
10	u = 57.2 cm, h = 8.6 cm	r, d, G, s, M, O, V
11	G = 109.4 m^2, V = 153.1 m^3	r, d, u, h, s, M, O
12	h = 7.4 mm, M = 118.9 mm^2	r, d, u, G, s, O, V
13	r = 6.6 dm, s = 6.8 dm	d, u, G, h, M, O, V
14	r = 8.1 cm, s = 10.8 cm	d, u, G, h, M, O, V
15	u = 17.6 dm, h = 4.1 dm	r, d, G, s, M, O, V
16	u = 34.6 dm, O = 267.8 dm^2	r, d, G, h, s, M, V
17	M = 48.1 m^2, O = 57.2 m^2	r, d, u, G, h, s, V
18	d = 5.2 dm, V = 48.1 dm^3	r, u, G, h, s, M, O
19	s = 9.0 cm, M = 197.9 cm^2	r, d, u, G, h, O, V

20	r = 7.8 m, h = 6.0 m	d, u, G, s, M, O, V

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

Lösungen:

Nr.	r=	d=	u=	G=	h=	s=	M=	O=	V=
1	6.4 dm	12.8 dm	40.2 dm	128.7 dm^2	4.6 dm	7.9 dm	158.8 dm^2	287.5 dm^2	197.3 dm^3
2	7.1 mm	14.2 mm	44.6 mm	158.4 mm^2	1.4 mm	7.2 mm	160.6 mm^2	319.0 mm^2	73.9 mm^3
3	7.5 cm	15.0 cm	47.1 cm	176.7 cm^2	5.4 cm	9.2 cm	216.8 cm^2	393.5 cm^2	318.1 cm^3
4	9.1 dm	18.2 dm	57.2 dm	260.2 dm^2	9.7 dm	13.3 dm	380.2 dm^2	640.4 dm^2	841.2 dm^3
5	9.9 mm	19.8 mm	62.2 mm	307.9 mm^2	9.4 mm	13.7 mm	426.1 mm^2	734.0 mm^2	964.8 mm^3
6	6.6 mm	13.2 mm	41.5 mm	136.8 mm^2	9.7 mm	11.7 mm	242.6 mm^2	379.4 mm^2	442.5 mm^3
7	3.2 m	6.4 m	20.1 m	32.2 m^2	5.1 m	6.0 m	60.3 m^2	92.5 m^2	54.7 m^3
8	3.2 m	6.4 m	20.1 m	32.2 m^2	9.4 m	9.9 m	99.5 m^2	131.7 m^2	100.8 m^3
9	2.5 cm	5.0 cm	15.7 cm	19.6 cm^2	3.9 cm	4.6 cm	36.1 cm^2	55.7 cm^2	25.5 cm^3
10	9.1 cm	18.2 cm	57.2 cm	260.2 cm^2	8.6 cm	12.5 cm	357.4 cm^2	617.6 cm^2	745.8 cm^3
11	5.9 m	11.8 m	37.1 m	109.4 m^2	4.2 m	7.2 m	133.5 m^2	242.9 m^2	153.1 m^3
12	4.4 mm	8.8 mm	27.6 mm	60.8 mm^2	7.4 mm	8.6 mm	118.9 mm^2	179.7 mm^2	150.0 mm^3
13	6.6 dm	13.2 dm	41.5 dm	136.8 dm^2	1.8 dm	6.8 dm	141.0 dm^2	277.8 dm^2	82.1 dm^3
14	8.1 cm	16.2 cm	50.9 cm	206.1 cm^2	7.1 cm	10.8 cm	274.8 cm^2	480.9 cm^2	487.8 cm^3
15	2.8 dm	5.6 dm	17.6 dm	24.6 dm^2	4.1 dm	5.0 dm	44.0 dm^2	68.6 dm^2	33.7 dm^3
16	5.5 dm	11.0 dm	34.6 dm	95.0 dm^2	8.3 dm	10.0 dm	172.8 dm^2	267.8 dm^2	262.9 dm^3
17	1.7 m	3.4 m	10.7 m	9.1 m^2	8.8 m	9.0 m	48.1 m^2	57.2 m^2	26.6 m^3
18	2.6 dm	5.2 dm	16.3 dm	21.2 dm^2	6.8 dm	7.3 dm	59.6 dm^2	80.8 dm^2	48.1 dm^3
19	7.0 cm	14.0 cm	44.0 cm	153.9 cm^2	5.7 cm	9.0 cm	197.9 cm^2	351.8 cm^2	292.5 cm^3
20	7.8 m	15.6 m	49.0 m	191.1 m^2	6.0 m	9.8 m	240.1 m^2	431.2 m^2	382.3 m^3

Aufgabe 4: Bestimme die fehlenden Größen (Radius r, Durchmesser d, Umfang u, Mantellinie s, Grundfläche G, Mantelfläche M, Oberfläche O, Volumen V) des Kegels.

Nr.	*Gegeben*:	*Gesucht*:
1	d = 40.0 cm, h = 29.4 cm	r, u, G, s, M, O, V
2	d = 11.0 dm, O = 378.4 dm^2	r, u, G, h, s, M, V
3	u = 89.8 mm, O = 1437.6 mm^2	r, d, G, h, s, M, V
4	r = 14.9 mm, V = 10741.0 mm^3	d, u, G, h, s, M, O
5	d = 31.4 mm, s = 39.0 mm	r, u, G, h, M, O, V
6	G = 962.1 cm^2, V = 6766.9 cm^3	r, d, u, h, s, M, O
7	s = 28.0 cm, M = 844.5 cm^2	r, d, u, G, h, O, V
8	h = 26.1 m, O = 556.3 m^2	r, d, u, G, s, M, V
9	M = 2060.9 dm^2, V = 10280.4 dm^3	r, d, u, G, h, s, O
10	u = 65.3 dm, M = 911.6 dm^2	r, d, G, h, s, O, V
11	h = 15.1 dm, M = 365.1 dm^2	r, d, u, G, s, O, V
12	u = 79.2 cm, s = 35.1 cm	r, d, G, h, M, O, V
13	G = 897.3 mm^2, M = 1290.2 mm^2	r, d, u, h, s, O, V
14	r = 12.8 m, O = 1930.2 m^2	d, u, G, h, s, M, V

15	r = 6.5 m, M = 663.7 m^2	d, u, G, h, s, O, V
16	s = 19.9 dm, M = 719.0 dm^2	r, d, u, G, h, O, V
17	M = 1501.6 mm^2, V = 6412.4 mm^3	r, d, u, G, h, s, O
18	r = 11.8 mm, s = 29.0 mm	d, u, G, h, M, O, V
19	s = 21.4 dm, M = 1109.3 dm^2	r, d, u, G, h, O, V
20	G = 227.0 cm^2, O = 1439.3 cm^2	r, d, u, h, s, M, V

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

Lösungen:

Nr.	r=	d=	u=	G=	h=	s=	M=	O=	V=
1	20.0 cm	40.0 cm	125.7 cm	1256.6 cm^2	29.4 cm	35.6 cm	2236.8 cm^2	3493.4 cm^2	12315.0 cm^3
2	5.5 dm	11.0 dm	34.6 dm	95.0 dm^2	15.5 dm	16.4 dm	283.4 dm^2	378.4 dm^2	491.0 dm^3
3	14.3 mm	28.6 mm	89.8 mm	642.4 mm^2	10.4 mm	17.7 mm	795.2 mm^2	1437.6 mm^2	2227.1 mm^3
4	14.9 mm	29.8 mm	93.6 mm	697.5 mm^2	46.2 mm	48.5 mm	2270.3 mm^2	2967.8 mm^2	10741.0 mm^3
5	15.7 mm	31.4 mm	98.6 mm	774.4 mm^2	35.7 mm	39.0 mm	1923.6 mm^2	2698.0 mm^2	9215.0 mm^3
6	17.5 cm	35.0 cm	110.0 cm	962.1 cm^2	21.1 cm	27.4 cm	1506.4 cm^2	2468.5 cm^2	6766.9 cm^3
7	9.6 cm	19.2 cm	60.3 cm	289.5 cm^2	26.3 cm	28.0 cm	844.5 cm^2	1134.0 cm^2	2538.2 cm^3
8	5.5 m	11.0 m	34.6 m	95.0 m^2	26.1 m	26.7 m	461.3 m^2	556.3 m^2	826.8 m^3
9	16.4 dm	32.8 dm	103.0 dm	845.0 dm^2	36.5 dm	40.0 dm	2060.9 dm^2	2905.9 dm^2	10280.4 dm^3
10	10.4 dm	20.8 dm	65.3 dm	339.8 dm^2	25.9 dm	27.9 dm	911.6 dm^2	1251.4 dm^2	2933.6 dm^3
11	7.0 dm	14.0 dm	44.0 dm	153.9 dm^2	15.1 dm	16.6 dm	365.1 dm^2	519.0 dm^2	774.8 dm^3
12	12.6 cm	25.2 cm	79.2 cm	498.8 cm^2	32.8 cm	35.1 cm	1389.4 cm^2	1888.2 cm^2	5453.1 cm^3
13	16.9 mm	33.8 mm	106.2 mm	897.3 mm^2	17.5 mm	24.3 mm	1290.2 mm^2	2187.5 mm^2	5234.1 mm^3
14	12.8 m	25.6 m	80.4 m	514.7 m^2	32.8 m	35.2 m	1415.5 m^2	1930.2 m^2	5627.6 m^3
15	6.5 m	13.0 m	40.8 m	132.7 m^2	31.8 m	32.5 m	663.7 m^2	796.4 m^2	1407.0 m^3
16	11.5 dm	23.0 dm	72.3 dm	415.5 dm^2	16.3 dm	19.9 dm	719.0 dm^2	1134.5 dm^2	2257.4 dm^3
17	14.1 mm	28.2 mm	88.6 mm	624.6 mm^2	30.8 mm	33.9 mm	1501.6 mm^2	2126.2 mm^2	6412.4 mm^3
18	11.8 mm	23.6 mm	74.1 mm	437.4 mm^2	26.5 mm	29.0 mm	1075.1 mm^2	1512.5 mm^2	3864.0 mm^3
19	16.5 dm	33.0 dm	103.7 dm	855.3 dm^2	13.6 dm	21.4 dm	1109.3 dm^2	1964.6 dm^2	3877.4 dm^3
20	8.5 cm	17.0 cm	53.4 cm	227.0 cm^2	44.6 cm	45.4 cm	1212.3 cm^2	1439.3 cm^2	3374.4 cm^3

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