

Felszín- és térfogatszámítás

1. Határozd meg a téglalapok felszínét és térfogatát, ha a téglalap egy csúcsba összefutó éléinek hossza a , b és c .

a) $a = 1, b = 2, c = 3$

$$\begin{array}{l} A = 22 \\ A = 6 \end{array}$$

b) $a = 1, b = 3, c = 2$

$$\begin{array}{l} A = 22 \\ A = 6 \end{array}$$

c) $a = 2, b = 3, c = 1$

$$\begin{array}{l} A = 22 \\ A = 6 \end{array}$$

d) $a = 2, b = 4, c = 4$

$$\begin{array}{l} A = 64 \\ A = 32 \end{array}$$

e) $a = 2, b = 7, c = 11$

$$\begin{array}{l} A = 226 \\ A = 154 \end{array}$$

f) $a = 3, b = 7, c = 3$

$$\begin{array}{l} A = 102 \\ A = 63 \end{array}$$

g) $a = 3, b = 9, c = 3$

$$\begin{array}{l} A = 126 \\ A = 81 \end{array}$$

h) $a = 4, b = 4, c = 5$

$$\begin{array}{l} A = 112 \\ A = 80 \end{array}$$

i) $a = 4, b = 5, c = 3$

$$\begin{array}{l} A = 94 \\ A = 60 \end{array}$$

j) $a = 4, b = 6, c = 5$

$$\begin{array}{l} A = 148 \\ A = 120 \end{array}$$

k) $a = 4, b = 11, c = 4$

$$\begin{array}{l} A = 208 \\ A = 176 \end{array}$$

l) $a = 5, b = 7, c = 4$

$$\begin{array}{l} A = 166 \\ A = 140 \end{array}$$

2. Határozd meg az egyenes henger felszínét és térfogatát, ha alapkörének sugara r , magassága pedig m .

a) $r = 1, m = 2$

$$\begin{array}{l} A = 18,85 \\ A = 6,28 \end{array}$$

b) $r = 1, m = 3$

$$\begin{array}{l} A = 25,13 \\ A = 9,42 \end{array}$$

c) $r = 2, m = 3$

$$\begin{array}{l} A = 62,83 \\ A = 37,70 \end{array}$$

d) $r = 2, m = 4$

$$\begin{array}{l} A = 75,40 \\ A = 50,27 \end{array}$$

e) $r = 2, m = 7$

$$\begin{array}{l} A = 113,10 \\ A = 87,96 \end{array}$$

f) $r = 3, m = 7$

$$\begin{array}{l} A = 188,50 \\ A = 197,92 \end{array}$$

g) $r = 3, m = 9$

$$\begin{array}{l} A = 226,19 \\ A = 254,47 \end{array}$$

h) $r = 4, m = 4$

$$\begin{array}{l} A = 201,06 \\ A = 251,33 \end{array}$$

i) $r = 4, m = 5$

$$\begin{array}{l} A = 226,19 \\ A = 251,33 \end{array}$$

j) $r = 4, m = 6$

$$\begin{array}{l} A = 251,33 \\ A = 301,59 \end{array}$$

k) $r = 4, m = 11$

$$\begin{array}{l} A = 376,99 \\ A = 552,92 \end{array}$$

l) $r = 5, m = 7$

$$\begin{array}{l} A = 376,99 \\ A = 549,78 \end{array}$$

3. Határozd meg a négyzet alapú gúla felszínét és térfogatát, ha alapéle a és magassága m !

a) $a = 1, m = 2$

$$\begin{array}{l} A = 5,12 \\ A = 0,67 \end{array}$$

b) $a = 1, m = 3$

$$\begin{array}{l} A = 7,8 \\ A = 1 \end{array}$$

c) $a = 2, m = 3$

$$\begin{array}{l} A = 16,65 \\ A = 4 \end{array}$$

d) $a = 2, m = 4$

$$\begin{array}{l} A = 20,49 \\ A = 5,33 \end{array}$$

e) $a = 2, m = 7$

$$\begin{array}{l} A = 32,28 \\ A = 9,33 \end{array}$$

f) $a = 3, m = 7$

$$\begin{array}{l} A = 51,95 \\ A = 21 \end{array}$$

g) $a = 3, m = 9$

$$\begin{array}{l} A = 63,74 \\ A = 27 \end{array}$$

h) $a = 4, m = 4$

$$\begin{array}{l} A = 51,78 \\ A = 21,33 \end{array}$$

i) $a = 4, m = 5$

$$\begin{array}{l} A = 59,08 \\ A = 26,67 \end{array}$$

j) $a = 4, m = 6$

$$\begin{array}{l} A = 66,60 \\ A = 32 \end{array}$$

k) $a = 4, m = 11$

$$\begin{array}{l} A = 105,44 \\ A = 58,67 \end{array}$$

l) $a = 5, m = 7$

$$\begin{array}{l} A = 99,33 \\ A = 58,33 \end{array}$$

4. Határozd meg a négyzet alapú gúla felszínét és térfogatát, ha alapéle a és oldaléle b !

a) $a = 1, b = 2$

$$\begin{array}{l} V = 0,62 \\ A = 4,87 \end{array}$$

b) $a = 1, b = 3$

$$\begin{array}{l} V = 0,97 \\ A = 6,92 \end{array}$$

c) $a = 2, b = 3$

$$\begin{array}{l} V = 3,53 \\ A = 15,31 \end{array}$$

d) $a = 2, b = 4$

$$\begin{array}{l} V = 4,99 \\ A = 19,49 \end{array}$$

e) $a = 2, b = 7$

$$\begin{array}{l} V = 9,14 \\ A = 31,71 \end{array}$$

f) $a = 3, b = 7$

$$\begin{array}{l} V = 20,01 \\ A = 50,02 \end{array}$$

g) $a = 3, b = 9$

$$\begin{array}{l} V = 26,24 \\ A = 62,24 \end{array}$$

h) $a = 4, b = 4$

$$\begin{array}{l} V = 15,08 \\ A = 43,71 \end{array}$$

i) $a = 4, b = 5$

$$\begin{array}{l} V = 21,99 \\ A = 52,66 \end{array}$$

j) $a = 4, b = 6$

$$\begin{array}{l} V = 28,22 \\ A = 61,25 \end{array}$$

k) $a = 4, b = 11$

$$\begin{array}{l} V = 56,69 \\ A = 102,53 \end{array}$$

l) $a = 5, b = 7$

$$\begin{array}{l} V = 50,35 \\ A = 90,38 \end{array}$$

5. Határozd meg a kúp felszínét és térfogatát, ha az alapkörének sugara r , és a magassága m !

a) $r = 1, m = 2$

$$\begin{array}{l} V = 2,09 \\ A = 10,17 \end{array}$$

b) $r = 1, m = 3$

$$\begin{array}{l} V = 3,14 \\ A = 13,08 \end{array}$$

c) $r = 2, m = 3$

$$\begin{array}{l} V = 12,57 \\ A = 35,22 \end{array}$$

d) $r = 2, m = 4$

$$\begin{array}{l} V = 16,76 \\ A = 40,67 \end{array}$$

e) $r = 2, m = 7$

$$\begin{array}{l} V = 29,32 \\ A = 58,31 \end{array}$$

f) $r = 3, m = 7$

$$\begin{array}{l} V = 65,97 \\ A = 100,05 \end{array}$$

g) $r = 3, m = 9$

$$\begin{array}{l} V = 84,82 \\ A = 117,69 \end{array}$$

h) $r = 4, m = 4$

$$\begin{array}{l} V = 67,02 \\ A = 121,35 \end{array}$$

i) $r = 4, m = 5$

$$\begin{array}{l} V = 83,78 \\ A = 130,73 \end{array}$$

j) $r = 4, m = 6$

$$\begin{array}{l} V = 100,53 \\ A = 140,88 \end{array}$$

k) $r = 4, m = 11$

$$\begin{array}{l} V = 184,31 \\ A = 197,35 \end{array}$$

l) $r = 5, m = 7$

$$\begin{array}{l} V = 183,26 \\ A = 213,66 \end{array}$$

6. Határozd meg a kúp felszínét és térfogatát, ha az alapkörének sugara r , alkotója pedig a !

a) $r = 1, a = 2$

$$\begin{array}{l} V = 1,81 \\ A = 9,42 \end{array}$$

b) $r = 1, a = 3$

$$\begin{array}{l} V = 2,96 \\ A = 12,57 \end{array}$$

c) $r = 2, a = 3$

$$\begin{array}{l} V = 9,37 \\ A = 31,42 \end{array}$$

d) $r = 2, a = 4$

$$\begin{array}{l} V = 14,51 \\ A = 37,70 \end{array}$$

e) $r = 2, a = 7$

$$\begin{array}{l} V = 28,10 \\ A = 56,55 \end{array}$$

f) $r = 3, a = 7$

$$\begin{array}{l} V = 59,61 \\ A = 94,25 \end{array}$$

g) $r = 3, a = 9$

$$\begin{array}{l} V = 79,97 \\ A = 113,10 \end{array}$$

h) $r = 4, a = 4$

$$\begin{array}{l} V = 0 \\ A = 100,53 \end{array}$$

i) $r = 4, a = 5$

$$\begin{array}{l} V = 50,27 \\ A = 113,10 \end{array}$$

j) $r = 4, a = 6$

$$\begin{array}{l} V = 74,93 \\ A = 125,66 \end{array}$$

k) $r = 4, a = 11$

$$\begin{array}{l} V = 171,69 \\ A = 188,49 \end{array}$$

l) $r = 5, a = 7$

$$\begin{array}{l} V = 128,25 \\ A = 188,49 \end{array}$$

7. Határozd meg a gömb felszínét és térfogatát, ha sugara r !

a) $r = 1,25$

$$\begin{array}{l} V = 8,18 \\ A = 19,63 \end{array}$$

b) $r = 5$

$$\begin{array}{l} V = 523,60 \\ A = 314,16 \end{array}$$

c) $r = 1$

$$\begin{array}{l} V = 4,19 \\ A = 12,57 \end{array}$$

d) $r = 1,14$

$$\begin{array}{l} V = 6,25 \\ A = 16,41 \end{array}$$

e) $r = 1,80$

$$\begin{array}{l} V = 24,43 \\ A = 40,72 \end{array}$$

f) $r = 10$

$$\begin{array}{l} V = 4188,78 \\ A = 1256,63 \end{array}$$

g) $r = 1,20$

$$\begin{array}{l} V = 7,24 \\ A = 18,10 \end{array}$$

h) $r = 1,29$

$$\begin{array}{l} V = 8,90 \\ A = 20,77 \end{array}$$

i) $r = 2$

$$\begin{array}{l} V = 33,51 \\ A = 50,27 \end{array}$$

j) $r = 1,57$

$$\begin{array}{l} V = 16,25 \\ A = 31,03 \end{array}$$

k) $r = 3,75$

$$\begin{array}{l} V = 220,89 \\ A = 176,71 \end{array}$$

l) $r = 3,67$

$$\begin{array}{l} V = 206,49 \\ A = 168,95 \end{array}$$

8. Határozd meg a téglalap alapú gúla felszínét és térfogatát, ha alapélei a és b , magassága pedig m !

a) $a = 1, b = 2, m = 3$

$$\begin{array}{l} V = 2 \\ A = 11,25 \end{array}$$

b) $a = 1, b = 3, m = 2$

$$\begin{array}{l} V = 2 \\ A = 11,68 \end{array}$$

c) $a = 2, b = 3, m = 1$

$$\begin{array}{l} V = 2 \\ A = 13,85 \end{array}$$

d) $a = 2, b = 4, m = 4$

$$\begin{array}{l} V = 10,67 \\ A = 33,44 \end{array}$$

e) $a = 2, b = 7, m = 11$

$$\begin{array}{l} V = 51,33 \\ A = 114,40 \end{array}$$

f) $a = 3, b = 7, m = 3$

$$\begin{array}{l} V = 21 \\ A = 58,31 \end{array}$$

g) $a = 3, b = 9, m = 3$

$$\begin{array}{l} V = 27 \\ A = 73,41 \end{array}$$

h) $a = 4, b = 4, m = 5$

$$\begin{array}{l} V = 26,67 \\ A = 59,08 \end{array}$$

i) $a = 4, b = 5, m = 3$

$$\begin{array}{l} V = 20 \\ A = 53,65 \end{array}$$

j) $a = 4, b = 6, m = 5$

$$\begin{array}{l} V = 40 \\ A = 79,63 \end{array}$$

k) $a = 4, b = 11, m = 4$

$$\begin{array}{l} V = 58,67 \\ A = 120,40 \end{array}$$

l) $a = 5, b = 7, m = 4$

$$\begin{array}{l} V = 46,67 \\ A = 94,59 \end{array}$$