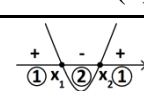
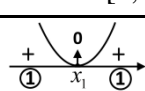
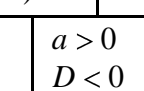
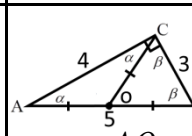
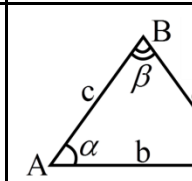
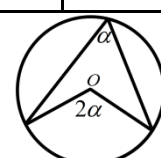
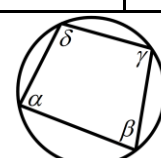
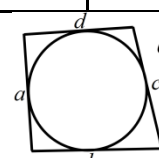


# Справочник ОГЭ по Математике

1	$\frac{1}{2} = 0,5; \frac{1}{4} = 0,25; \frac{2}{4} = \frac{1}{2} = 0,5; \frac{3}{4} = 0,75; \frac{1}{5} = 0,2; \frac{2}{5} = 0,4; \frac{3}{5} = 0,6; \frac{4}{5} = 0,8; \frac{1}{8} = 0,125$																																																																																																																								
2	$1\% = \frac{1}{100} = 0,01; 10\% = 0,1; 24\% = 0,24; 50\% = 0,5; 100\% = 1; 137\% = 1,37$																																																																																																																								
3	$\sqrt{0} = 0; \sqrt{1} = 1; \sqrt{2} \approx 1,41; \sqrt{3} \approx 1,73;$ $\sqrt{4} = 2; \sqrt{5} \approx 2,23; \sqrt{6} \approx 2,45$			<table border="1" style="font-size: small; border-collapse: collapse;"> <thead> <tr> <th>n\2</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> <th>7</th> <th>8</th> <th>9</th> <th>10</th> </tr> </thead> <tbody> <tr><td>1</td><td>121</td><td>144</td><td>169</td><td>196</td><td>225</td><td>256</td><td>289</td><td>324</td><td>361</td><td>400</td></tr> <tr><td>2</td><td>441</td><td>484</td><td>529</td><td>576</td><td>625</td><td>676</td><td>729</td><td>784</td><td>841</td><td>900</td></tr> <tr><td>3</td><td>961</td><td>1024</td><td>1089</td><td>1156</td><td>1225</td><td>1296</td><td>1369</td><td>1444</td><td>1521</td><td>1600</td></tr> <tr><td>4</td><td>1681</td><td>1764</td><td>1849</td><td>1936</td><td>2025</td><td>2116</td><td>2209</td><td>2304</td><td>2401</td><td>2500</td></tr> <tr><td>5</td><td>2601</td><td>2704</td><td>2809</td><td>2916</td><td>3025</td><td>3136</td><td>3249</td><td>3364</td><td>3481</td><td>3600</td></tr> <tr><td>6</td><td>3721</td><td>3844</td><td>3969</td><td>4096</td><td>4225</td><td>4356</td><td>4489</td><td>4624</td><td>4761</td><td>4900</td></tr> <tr><td>7</td><td>5041</td><td>5184</td><td>5329</td><td>5476</td><td>5625</td><td>5776</td><td>5929</td><td>6084</td><td>6241</td><td>6400</td></tr> <tr><td>8</td><td>6561</td><td>6724</td><td>6889</td><td>7056</td><td>7225</td><td>7396</td><td>7569</td><td>7744</td><td>7921</td><td>8100</td></tr> <tr><td>9</td><td>8281</td><td>8464</td><td>8649</td><td>8836</td><td>9025</td><td>9216</td><td>9409</td><td>9604</td><td>9801</td><td>10000</td></tr> </tbody> </table>							n\2	1	2	3	4	5	6	7	8	9	10	1	121	144	169	196	225	256	289	324	361	400	2	441	484	529	576	625	676	729	784	841	900	3	961	1024	1089	1156	1225	1296	1369	1444	1521	1600	4	1681	1764	1849	1936	2025	2116	2209	2304	2401	2500	5	2601	2704	2809	2916	3025	3136	3249	3364	3481	3600	6	3721	3844	3969	4096	4225	4356	4489	4624	4761	4900	7	5041	5184	5329	5476	5625	5776	5929	6084	6241	6400	8	6561	6724	6889	7056	7225	7396	7569	7744	7921	8100	9	8281	8464	8649	8836	9025	9216	9409	9604	9801	10000	$\sqrt{8} = 2\sqrt{2}; \sqrt{12} = 2\sqrt{3}; \sqrt{18} = 3\sqrt{2};$ $\sqrt{20} = 2\sqrt{5}; \sqrt{48} = 4\sqrt{3}; \sqrt{50} = 5\sqrt{2}$
n\2	1	2	3	4	5	6	7	8	9	10																																																																																																															
1	121	144	169	196	225	256	289	324	361	400																																																																																																															
2	441	484	529	576	625	676	729	784	841	900																																																																																																															
3	961	1024	1089	1156	1225	1296	1369	1444	1521	1600																																																																																																															
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5	2601	2704	2809	2916	3025	3136	3249	3364	3481	3600																																																																																																															
6	3721	3844	3969	4096	4225	4356	4489	4624	4761	4900																																																																																																															
7	5041	5184	5329	5476	5625	5776	5929	6084	6241	6400																																																																																																															
8	6561	6724	6889	7056	7225	7396	7569	7744	7921	8100																																																																																																															
9	8281	8464	8649	8836	9025	9216	9409	9604	9801	10000																																																																																																															
4	$a^2 - b^2 = (a-b)(a+b)$ $a^2 + b^2 = (a+b)^2 - 2ab$		$(a+b)^2 = a^2 + 2ab + b^2$ $(a-b)^2 = a^2 - 2ab + b^2$		$a^3 + b^3 = (a+b)(a^2 - ab + b^2)$ $a^3 - b^3 = (a-b)(a^2 + ab + b^2)$																																																																																																																				
5	$a^x \cdot a^y = a^{x+y}$ $\frac{a^x}{a^y} = a^{x-y}$	$(a^x)^y = a^{xy}$ $a^x \cdot b^x = (a \cdot b)^x$	$\frac{a^x}{b^x} = \left(\frac{a}{b}\right)^x$	$a^0 = 1$ $a^1 = a$	$a^{-1} = \frac{1}{a}$	$a^{-n} = \frac{1}{a^n}$	$a^{\frac{1}{n}} = \sqrt[n]{a}$	$a^{\frac{m}{n}} = \sqrt[n]{a^m}$																																																																																																																	
6	$\sqrt{a} \cdot \sqrt{b} = \sqrt{a \cdot b}$ $\frac{\sqrt{a}}{\sqrt{b}} = \sqrt{\frac{a}{b}}$	$(\sqrt{a})^2 = a$ $\sqrt{a} \cdot \sqrt{a} = a$	$\sqrt{5} \cdot \sqrt{5} = 5$ $(\sqrt{7})^2 = 7$	$\frac{3}{\sqrt{3}} = \sqrt{3}$	$\frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$	$\frac{6}{\sqrt{2}} = 3\sqrt{2}$	$\frac{5}{\sqrt{2}} = \frac{5\sqrt{2}}{2}$																																																																																																																		
7	$ax^2 + bx + c = 0$ $D = b^2 - 4ac$	$D \geq 0 \Rightarrow x_{1,2} = \frac{-b \pm \sqrt{D}}{2a}$			$D = 0 \Rightarrow x = -\frac{b}{2a}$		$D < 0 \Rightarrow x \in \emptyset$																																																																																																																		
8	$ax^2 + bx + c = a(x - x_1)(x - x_2)$		$\begin{cases} x_1 + x_2 = -\frac{b}{a} \\ x_1 \cdot x_2 = \frac{c}{a} \end{cases}$			$x^2 + px + q = 0 \Leftrightarrow \begin{cases} x_1 + x_2 = -p \\ x_1 \cdot x_2 = q \end{cases}$																																																																																																																			
9	$a < x < b \Leftrightarrow x \in (a; b)$ $a \leq x \leq b \Leftrightarrow x \in [a; b]$	$a \leq x < b \Leftrightarrow x \in [a; b)$ $a < x \leq b \Leftrightarrow x \in (a; b]$	$x > a \Leftrightarrow x \in (a; +\infty)$ $x \geq a \Leftrightarrow x \in [a; +\infty)$	$x < a \Leftrightarrow x \in (-\infty; a)$ $x \leq a \Leftrightarrow x \in (-\infty; a]$																																																																																																																					
10	$ax + bx + c > 0$ (1) $ax + bx + c < 0$ (2)	$a > 0$ $D > 0$ 	$a > 0$ $D = 0$ 	$a > 0$ $D < 0$ 																																																																																																																					
12	СИНОСУС = $\frac{\text{ПРОТ.КАТЕТ}}{\text{ГИПОТЕНУЗА}}$ ; КОСИНОСУС = $\frac{\text{ПРИЛЕЖ.КАТЕТ}}{\text{ГИПОТЕНУЗА}}$ ; ТАНГЕНС = $\frac{\text{ПРОТ.КАТЕТ}}{\text{ПРИЛЕЖ.КАТЕТ}}$																																																																																																																								
13	 $a^2 + b^2 = c^2$ $3^2 + 4^2 = 5^2$ $AO = BO = CO = R$		$\sin \alpha = \cos \beta = \frac{a}{c} = \frac{3}{5}$ $\cos \alpha = \sin \beta = \frac{b}{c} = \frac{4}{5}$	$tg \alpha = \frac{a}{b} = \frac{3}{4}$ $\sin 45^\circ = \cos 45^\circ = \frac{\sqrt{2}}{2}$			$\sin 30^\circ = \cos 60^\circ = \frac{1}{2}$ $\sin 60^\circ = \cos 30^\circ = \frac{\sqrt{3}}{2}$																																																																																																																		
14	 $\alpha + \beta + \gamma = 180$ $S = \frac{1}{2} ab \cdot \sin \gamma$ $S = \frac{a \cdot h_a}{2}$		$S = p \cdot r$ $h_a = \frac{2 \cdot S}{a}$	$R = \frac{abc}{4S}$ $r = \frac{S}{p}$	$\frac{a}{\sin \alpha} = \frac{b}{\sin \beta} = \frac{c}{\sin \gamma} = 2R$ $a^2 = b^2 + c^2 - 2bc \cdot \cos \alpha$ $S = \sqrt{p(p-a)(p-b)(p-c)}$			$S_{PABH} = \frac{a^2 \sqrt{3}}{4}; r = \frac{a}{2\sqrt{3}}$ $h = \frac{a\sqrt{3}}{2}; R = \frac{a}{\sqrt{3}}$																																																																																																																	
15	$S_{\square} = a^2$ $S_{\square} = \frac{d^2}{2}$	$S_{\diamond} = ah$ $S_{\diamond} = \frac{1}{2} d_1 d_2$	$S_{\diamond} = a^2 \sin \alpha$ $S_{\diamond} = p \cdot r$		$S_{\square} = a \cdot h_a$ $S_{\square} = ab \sin \alpha$		$S_{\square} = \frac{1}{2} d_1 d_2 \sin \gamma$		$S_{\square} = \pi R^2$ $S_{\text{ТРАП}} = \frac{a+b}{2} \cdot h$																																																																																																																
16			 $\alpha + \gamma = 180^\circ$ $\beta + \delta = 180^\circ$			 $a + c = b + d$																																																																																																																			