

$n$	Probability all $n$ persons have <i>different</i> birth month	Probability 2 or more have <i>same</i> birth month
<b>2</b>	$\frac{12 \cdot 11}{12 \cdot 12} = 0.9167$	<b>0.0833</b>
<b>3</b>	$\frac{12 \cdot 11 \cdot 10}{12 \cdot 12 \cdot 12} = 0.7639$	<b>0.2361</b>
<b>4</b>	$\frac{12 \cdot 11 \cdot 10 \cdot 9}{12 \cdot 12 \cdot 12 \cdot 12} = 0.5729$	<b>0.4271</b>
<b>5</b>	etc. 0.3819	<b>0.6181</b>
<b>6</b>	0.2228	<b>0.7772</b>
<b>7</b>	0.1114	<b>0.8886</b>
<b>8</b>	0.0464	<b>0.9536</b>
<b>9</b>	0.0155	<b>0.9845</b>
<b>10</b>	0.0039	<b>0.9961</b>
<b>11</b>	0.0006	<b>0.9994</b>
<b>12</b>	$\frac{12 \cdot 11 \cdot \dots \cdot 1}{12 \cdot 12 \cdot \dots \cdot 12} = 0.0001$	<b>0.9999</b>
<b>13</b>	$\frac{12 \cdot 11 \cdot \dots \cdot 1 \cdot 0}{12 \cdot 12 \cdot \dots \cdot 12 \cdot 12} = 0.0000$	<b>1.0000</b>

$n$	Probability all $n$ persons have <i>different</i> birth day of month	Probability 2 or more have <i>same</i> birth day of month
<b>2</b>	$\frac{31 \cdot 30}{31 \cdot 31} = 0.9677$	<b>0.0323</b>
<b>3</b>	$\frac{31 \cdot 30 \cdot 29}{31 \cdot 31 \cdot 31} = 0.9053$	<b>0.0947</b>
<b>4</b>	$\frac{31 \cdot 30 \cdot 29 \cdot 28}{31 \cdot 31 \cdot 31 \cdot 31} = 0.8177$	<b>0.1823</b>
<b>5</b>	etc. 0.7122	<b>0.2878</b>
<b>6</b>	0.5973	<b>0.4027</b>
<b>7</b>	0.4817	<b>0.5183</b>
<b>8</b>	0.3929	<b>0.6271</b>
<b>9</b>	0.2967	<b>0.7233</b>
<b>10</b>	0.1964	<b>0.8036</b>
<b>11</b>	0.1330	<b>0.8670</b>
<b>12</b>	0.0858	<b>0.9142</b>
<b>13</b>	0.0526	<b>0.9474</b>

$n$	Probability all $n$ persons have <i>different</i> birthday	Probability 2 or more have <i>same</i> birthday
<b>2</b>	$\frac{366 \cdot 365}{366 \cdot 366} = 0.9973$	<b>0.0027</b>
<b>3</b>	$\frac{366 \cdot 365 \cdot 364}{366 \cdot 366 \cdot 366} = 0.9918$	<b>0.0082</b>
<b>4</b>	0.9837	<b>0.0163</b>
<b>10</b>	0.8834	<b>0.1166</b>
<b>22</b>	0.5252	<b>0.4748</b>
<b>23</b>	0.4937	<b>0.5063</b>
<b>24</b>	0.4627	<b>0.5373</b>
<b>25</b>	0.4323	<b>0.5677</b>
<b>30</b>	0.2947	<b>0.7053</b>
<b>40</b>	0.1095	<b>0.8905</b>
<b>50</b>	0.0299	<b>0.9701</b>
<b>60</b>	0.0600	<b>0.9940</b>