II.1-§.

76.1)$\pi(5)$=3. 2)$\pi(10) = 4$. 3) $\pi(25) = 9$. 4) $\pi(37) = 12$. 5) $\pi(200) =$ 46. 6) $\pi(1000) = 168$. **77.** 1)$\pi(100) \approx 22, \omega = \frac{\Delta\pi(x)}{\pi(x)} = 12\%$. 2) $\pi(500) \approx 80, \omega \approx 16\%$. 3)$\pi(1000) \approx 145$, $\omega \approx 14\%$. 4) $\pi(3000) \approx 3{,}75$; $\omega \approx 12$

II.2-§.

81. *a)*3. *b)*11. *c)* 1. *d)*2. *e)*3. *i)*2. *j)*2. *f)* -2. *l)* -1. *k)* 7. **89**. *a)* $-\sqrt{3} < x \leq -\sqrt{2}$ va $\sqrt{2} < x \leq \sqrt{3}$. *b)* $x = 1$. *c)* $x = 0, \frac{4}{3}, \frac{8}{3}$. *d)* $x = 0, 1$. **91**. $[-x] =$

$\begin{cases} -[x] & \text{ga; agar } x \text{ butun son bo'lsa;} \\ -[x]-1 & \text{ga; agar } x \text{ kasir son bo'lsa.} \end{cases}$ **94**. 11450; **95.** 686. **96.** 33. **97**. 502. **98.** $\frac{p^n-1}{p-1}$. **99.** 48. **100**. $11! = 2^8 \cdot 3^4 \cdot 5^2 \cdot 7 \cdot 11$. n**101.**148. **102**. $p = 2$bo'lsa, $m + \sum_{i=1}^{k} \left[\frac{m}{2^i}\right]$ ga teng; $p > 2$bo'lsa, $\sum_{i=1}^{s} \left[\frac{m}{p^i}\right]$ ga teng. **103**. $2m+1 \le x < 2m+2$, $m = 0,1,2,\ldots$. **104.** $a > 0$ bo'lganda $\left[-\frac{b^2-4ac}{4a}\right] \le d$; $a < 0$ bo'lganda $\left[-\frac{b^2-4ac}{4a}\right] \ge d$. **105**. $\sum_{k=a}^{b}([f(k)]+1)$. **106.** 136**. 107.** 5631.

II.3-§.

108. 1).$\tau(375) = 8, \sigma(375) = 624$.2). $\tau(720) = 30, \sigma(720) = 2418$.3). $\tau(957) = 8, \sigma(957) = 1440$.4). $\tau(988) = 12,\ \sigma(988) = 1960.$ 5). $\tau(988) = 24,$ $\sigma(990) = 2808.$ 6). $\tau(1200) = 30,$ $\sigma(1200) = 3844$.7). $\tau(1440) = 36,\ \sigma(1440) = 4914$.8). $\tau(1500) = 24,$ $\sigma(1500) = 4368$.9). $\tau(1890) = 32$, $\sigma(1890) = 5760.$ 10). $\tau(4320) = 48,$ $\sigma(4320) = 15120.$

109. 1). $1, 2, 3, 4, 5, 6, 8, 9, 10, 12, 15, 18, 20, 24, 30, 36, 40, 45, 60, 72, 90, 120, 180, 360.$ Ularning jami soni $24\ ta$.2).$1, 2, 3, 4, 5, 6, 8, 9, 10, 12, 15, 16, 18, 20, 24, 30, 36, 40, 45, 48, 60, 72, 80, 90, 120, 144, 180, 240, 360, 720. Jami: 30 ta.$ 3). $1, 2, 3, 6, 9, 18, 53, 106, 159, 318, 477, 954.\ Jami: 12\ ta$ .4). $1, 2, 4, 13, 19, 26, 38, 52, 76, 247, 494, 988. Jami: 12\ ta.$ 5).$1, 2, 3, 4, 5, 6, 8, 10, 12, 15, 20, 24, 25, 30, 40, 50, 60, 75, 100, 120150, 200, 300, 600. Jami: 24\ ta.$ **110.**12. **111.**28. **115**. 1). $\tau(m)\tau(n) > \tau(mn)$. 2). $\sigma(m)\sigma(n) > \sigma(mn)$. **116.** $\delta(m) = \sqrt{m^{\tau(m)}}$ va $\delta(10) = 100$. **118.** $\sigma_k(n) = \prod_{i=1}^{s} \frac{p^{k(\alpha_i+1)}-1}{p_i^k-1}$. **119.**1). $\sigma_2(12) = 210$. 2). $\sigma_2(18) = 455$. 3). $\sigma_3(36) = 6643$. 4). $\sigma_2(16) = 341$.5). $\sigma_3(8) = 585$. **123.** 1). $n = 18$. 2). $n = 16875$. **124.** $\left[\frac{1+\tau(n)}{2}\right]$. **125.** $N = 2^3 \cdot 5^2 \cdot 7 = 1400$. **126.** $N = 2^6 \cdot 3^5 \cdot 5^4 = 9720000$. **129**. $N = 2^3 \cdot 5 \cdot 3 = 120$.

II.4-§.

132. 1).100.2). 400.3). 48. 4). 64. 5). 384.6). 432.7). 1331;8). 506.9).64.10).6912. **133**. $\varphi(m)$. **134**. 88. **138.** *a).* 3.b). 3. c).$p > 2$ bo'lsa tenglama yechimga ega emas. $p = 2$ da ixtiyoriy natural son x tenglamaning yechimi bo'ladi. d).$x = 2;\ y = 3$. **141**. $(m; n) > 1$ bo'lsa, $\varphi(m)\varphi(n) < \varphi(mn)$ bo'ladi. **144**. $p^{\propto}$. 16. $S = \frac{1}{2} m\varphi(m)$. **148**.1).$p = 2$ tenglama bitta $x = p = 2$ yechimga, $p > 2$ bo'lsa, tenglama 2 ta p va

$2p$ yechimga ega bo'ladi. 2). Tenglama yechimga ega emas. 3).$x = 15; 16; 20; 24; 30$. 4). $x = 5; 13; 21; 26; 28; 36; 42$. **149.** 1).$x = 2^{\propto+1}$; $2^{\alpha-1} \cdot 5$; $2^{\propto} \cdot 3$; 15; $2^{\propto-2} \cdot 15$.2).$p = 3$ ixtiyoriy x qanoatlantiradi $p \neq 3$ da yechimi yoq. **150.** $m = 7875$. **151**. $x = 143$. **152.** 14161. **153.** *a).*$p = 2$ da berilgan tenglamani x ning barcha toq qiymatlari qanoatlantiradi; $p \geq 3$ bo'lsa tenglama yechimga ega emas. b). Agar $(x; p) = 1$ bo'lsa, yechim yo'q. Agar $x = p_1^{\propto_1} \cdot p_2^{\propto_2} \ldots . p_k^{\propto_k}$ bo'lsa, berilgan tenglamani x ning p ga karra natural qiymatlari qanoatlantiradi. **154.** *a).*$x = 2^{\propto}$ tenglamaning yechimi $(\propto \geq 1)$. b). $x = 2^{\propto} \cdot 3^{\beta}$. c). yechimga ega emas. **157**. $\varphi(2) + \varphi(3) + \cdots + \varphi(n)$. **158**. 8 ta.