THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

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GABA CAMPUS – ELDORET MAIN EXAMINATION SEPTEMBER – DECEMBER 2021 TRIMESTER FACULTY OF ARTS AND SOCIAL SCIENCES MASTER OF ARTS IN COUNSELING PSYCHOLOGY MCP 501: SOCIAL STATISTICS

Date: December 2021

Duration: 3 Hours

Instructions: Answer Question ONE and any other THREE Questions

QUESTION ONE

- a) Using relevant examples, describe the following terms as used in statistics.
 - i) Measurement (1 mark)ii) A parametric test (1 mark)
- b) The following data shows students' marks in an exam. Use it to answer the guestions that follow.

Marks	Frequency
11-15	3
16-20	5
21-30	9
31-35	6
36-40	2

Determine:

- i) The mean mark (4 marks)
- ii) The median score (3 marks)
- iii) The variance (4 marks)
- iv) The standard deviation (2 marks)
- v) Draw a histogram to represent the above statistical information

(2 ¹/₂ marks)

CUEA/ACD/EXM/SEPT- DEC 2021/GABA/FASS - MCP

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ISO 9001:2015 Certified by the Kenya Bureau of Standards.

QUESTION TWO

A researcher intended to compare the effectiveness of two instructional methods, A and B. He obtained a sample of results of two groups of students who were taught using the two instructional methods. The data below shows the results.

Instructional Method	N	×	s.d
A	10	40.2	4.8
В	12	38.6	3.7

Test a hypothesis at α = 0.05 to examine the difference in mean scores associated to the two teaching methods. (17 ¹/₂ marks)

QUESTION THREE

A teacher wanted to establish the degree of relationship between performance in Mathematics (X) and their performance in Physics (Y) in his class. The following results were obtained by five students in a test.

Mathematics scores (x)		Physics scores (y)
8	9	
9	8	
7	10	
5	4	
6	7	

By computing Spearmann's rank correlation coefficient, examine the degree of relationship between mathematics and physics scores and hence interpret your result. (17 ½ marks)

QUESTION FOUR

A teacher suggests that Mock results have a linear relationship with KCSE results. The following results show the scores obtained by five students in the two exams.

Mock score (x)	KCSE score (y)
60	79
47	67
52	62
57	46
40	48

- a) Support the above suggestion by obtaining a linear regression equation relating mock scores and KCSE scores in the form Y = a + bx, where a and b are constants (14 ¹/₂ marks)
- b) What is the likely score of KCSE for a student who scores 53 in the mock?

(3 marks)

QUESTION FIVE

Critically examine the steps followed during hypothesis testing process

(17 ¹/₂ marks)

t- Distribution: Critical Values of *t*

Significance level

1 6.14 12.066 31.821 63.657 318.309 636.619 2 2.920 4.303 6.965 9.925 22.327 31.599 3 2.153 3.182 4.541 5.841 10.215 12.924 4 2.132 2.776 3.747 4.604 7.171 8.610 5 2.015 2.571 3.365 4.032 5.893 6.869 6 1.943 2.447 3.143 3.707 5.208 5.993 7 1.894 2.365 2.998 3.499 4.785 5.408 8 1860 2.306 2.891 3.250 4.297 4.781 10 1.812 2.228 2.718 3.106 4.025 4.43 13 1.771 2.160 2.661 3.052 3.333 4.033 14 1.746 2.110 2.557 2.888 3.646 3.920 17 1.740 2.110 2.557	Degrees of freedom	Two-tailed test: One-tailed test:	10% 5%	5% 2.5%	2% 1%	1% 0.5%	0.2% 0.1%	0.1% 0.05%
2 2.920 4.303 6.965 9.925 2.2327 31.599 3 2.353 3.182 4.541 5.841 10.215 12.924 4 2.132 2.776 3.747 4.604 7.173 8.610 5 2.015 2.571 3.365 4.032 5.893 6.869 6 1.943 2.365 2.998 3.499 4.785 5.408 8 1.860 2.306 2.896 3.355 4.501 5.041 9 1.833 2.262 2.811 3.169 4.144 4.587 10 1.812 2.228 2.764 3.169 4.144 4.587 11 1.796 2.201 2.718 3.106 4.025 4.437 12 1.782 2.179 2.681 3.055 3.930 4.318 13 1.771 2.160 2.650 3.012 3.852 4.221 14 1.761 2.145 2.624 2.977 3.787 4.140 15 1.774 2.100 2	1		6.314	12.706	31.821	63.657	318.309	636.619
3 2.353 3.182 4.541 5.841 10.215 2.924 4 2.132 2.776 3.747 4.604 7.173 8.610 5 2.015 2.571 3.365 4.032 5.893 6.809 6 1.943 2.447 3.143 3.707 5.208 5.959 7 1.860 2.306 2.896 3.355 4.501 5.041 9 1.833 2.262 2.821 3.250 4.297 4.781 10 1.812 2.228 2.764 3.169 4.144 4.587 11 1.796 2.201 2.718 3.106 4.025 4.437 13 1.771 2.160 2.661 3.055 3.930 4.073 15 1.753 2.131 2.602 2.947 3.733 4.073 16 1.746 2.120 2.583 2.921 3.686 4.015 17 1.740 2.110 2.567 2.898 3.646 3.952 18 1.725 2.080 2.5	2		2.920	4.303	6.965	9.925	22.327	31.599
4 2.132 2.776 3.747 4.604 7.173 8.610 5 2.015 2.571 3.365 4.032 5.893 6.869 7 1.894 2.365 2.998 3.499 4.785 5.408 8 1.800 2.306 2.896 3.355 4.501 5.041 9 1.833 2.262 2.821 3.250 4.297 4.781 10 1.812 2.228 2.764 3.169 4.144 4.587 11 1.776 2.616 3.015 3.930 4.318 13 1.771 2.160 2.650 3.012 3.852 4.221 14 1.761 2.145 2.622 2.947 3.733 4.073 15 1.753 2.131 2.602 2.947 3.733 4.03 15 1.740 2.110 2.552 2.878 3.646 3.965 16 1.746 2.120 2.582 2.845 3.552 3.830 20 1.725 2.066 2.528 2.84	3		2.353	3.182	4.541	5.841	10.215	12.924
5 2.015 2.571 3.365 4.032 5.893 6.869 6 1.943 2.447 3.143 3.707 5.208 5.959 7 1.894 2.365 2.996 3.355 4.501 5.041 9 1.833 2.262 2.821 3.250 4.297 4.781 10 1.812 2.228 2.764 3.166 4.144 4.587 11 1.796 2.201 2.718 3.106 4.025 4.437 12 1.782 2.179 2.681 3.055 3.930 4.318 13 1.771 2.160 2.650 3.012 3.686 4.015 17 1.746 2.120 2.583 2.921 3.686 4.015 17 1.740 2.101 2.552 2.888 3.646 3.962 19 1.729 2.093 2.539 2.861 3.579 3.883 20 1.725 2.086 2.518	4		2.132	2.776	3.747	4.604	7.173	8.610
6 1.943 2.447 3.143 3.707 5.208 5.959 7 1.894 2.365 2.998 3.3499 4.785 5.408 9 1.833 2.262 2.821 3.250 4.297 4.781 10 1.812 2.228 2.764 3.169 4.144 4.587 11 1.796 2.201 2.718 3.106 4.025 4.437 12 1.782 2.179 2.681 3.055 3.930 4.318 13 1.771 2.160 2.660 3.012 3.882 4.221 14 1.761 2.145 2.624 2.977 3.787 4.140 15 1.733 2.131 2.602 2.947 3.733 4.073 16 1.746 2.100 2.567 2.898 3.646 3.965 17 1.740 2.110 2.552 2.878 3.616 3.929 172 2.093 2.539 2.861 3.572 3.833 20 1.725 2.086 2.819 3.552 <	5		2.015	2.571	3.365	4.032	5.893	6.869
7 1.894 2.365 2.998 3.499 4.785 5.408 8 1.860 2.306 2.896 3.355 4.501 5.041 9 1.833 2.262 2.821 3.250 4.297 4.781 10 1.812 2.228 2.764 3.169 4.144 4.587 11 1.796 2.201 2.718 3.106 4.025 4.431 13 1.771 2.160 2.650 3.012 3.852 4.221 14 1.761 2.145 2.624 2.977 3.787 4.140 15 1.733 2.131 2.602 2.848 3.646 3.952 16 1.746 2.120 2.583 2.921 3.686 4.015 17 1.740 2.110 2.567 2.878 3.610 3.922 19 1.722 2.080 2.518 2.845 3.552 3.833 20 1.721 2.080 2.518	6		1.943	2.447	3,143	3,707	5.208	5,959
8 1.860 2.306 2.896 3.355 4.501 5.041 9 1.833 2.262 2.821 3.250 4.297 4.781 10 1.812 2.228 2.764 3.166 4.144 4.587 11 1.796 2.201 2.718 3.106 4.025 4.437 12 1.782 2.179 2.681 3.055 3.930 4.318 13 1.771 2.160 2.650 3.012 3.852 4.221 14 1.761 2.145 2.624 2.977 3.787 4.140 15 1.746 2.110 2.567 2.898 3.646 3.965 17 1.740 2.110 2.567 2.898 3.646 3.965 18 1.721 2.080 2.518 2.845 3.552 3.830 20 1.717 2.069 2.500 2.807 3.485 3.768 24 1.711 2.069 2.508	7		1.894	2.365	2.998	3.499	4.785	5.408
9 1.833 2.262 2.821 3.250 4.297 4.781 10 1.812 2.228 2.764 3.169 4.144 4.587 11 1.796 2.201 2.718 3.106 4.025 4.431 12 1.782 2.179 2.681 3.055 3.930 4.318 13 1.771 2.160 2.650 3.012 3.852 4.221 14 1.761 2.145 2.624 2.977 3.733 4.073 15 1.753 2.131 2.602 2.947 3.733 4.073 16 1.746 2.101 2.557 2.898 3.646 3.955 17 1.744 2.101 2.557 2.878 3.610 3.922 19 1.721 2.080 2.518 2.881 3.527 3.819 320 1.717 2.074 2.500 2.807 3.455 3.702 23 1.717 2.060 2.481 <th>8</th> <th></th> <th>1.860</th> <th>2.306</th> <th>2.896</th> <th>3.355</th> <th>4.501</th> <th>5.041</th>	8		1.860	2.306	2.896	3.355	4.501	5.041
10 1.812 2.228 2.764 3.169 4.144 4.587 11 1.796 2.201 2.718 3.106 4.025 4.37 12 1.782 2.179 2.681 3.055 3.930 4.318 13 1.771 2.160 2.650 3.012 3.852 4.221 14 1.761 2.145 2.624 2.947 3.733 4.073 16 1.746 2.120 2.583 2.921 3.686 4.015 17 1.740 2.110 2.557 2.878 3.610 3.922 19 1.729 2.093 2.339 2.861 3.579 3.883 20 1.725 2.086 2.528 2.845 3.552 3.880 21 1.717 2.074 2.500 2.819 3.505 3.792 23 1.714 2.069 2.500 2.807 3.485 3.768 24 1.703 2.052 2.473 3.450 3.725 26 1.706 2.056 2.479 <td< th=""><th>9</th><th></th><th>1.833</th><th>2.262</th><th>2.821</th><th>3.250</th><th>4.297</th><th>4.781</th></td<>	9		1.833	2.262	2.821	3.250	4.297	4.781
11 1.796 2.201 2.718 3.106 4.025 4.437 12 1.782 2.179 2.681 3.055 3.390 4.318 13 1.771 2.160 2.650 3.012 3.852 4.221 14 1.761 2.145 2.624 2.977 3.787 4.140 15 1.733 2.131 2.602 2.947 3.733 4.073 16 1.746 2.120 2.583 2.921 3.686 4.015 17 1.740 2.110 2.557 2.898 3.646 3.955 18 1.729 2.093 2.539 2.861 3.579 3.883 20 1.725 2.066 2.528 2.845 3.555 3.792 23 1.714 2.069 2.500 2.807 3.485 3.768 24 1.711 2.064 2.492 2.797 3.467 3.745 25 1.708 2.060 2.485 2.757 3.306 3.690 28 1.701 2.044 <t< th=""><th>10</th><th></th><th>1.812</th><th>2.228</th><th>2.764</th><th>3.169</th><th>4.144</th><th>4.587</th></t<>	10		1.812	2.228	2.764	3.169	4.144	4.587
12 1.782 2.179 2.681 3.055 3.930 4.318 13 1.771 2.160 2.650 3.012 3.852 4.221 14 1.761 2.145 2.624 2.977 3.787 4.140 15 1.753 2.131 2.602 2.947 3.733 4.073 16 1.740 2.110 2.567 2.898 3.646 3.955 18 1.734 2.101 2.552 2.878 3.610 3.922 19 1.729 2.093 2.539 2.861 3.557 3.883 20 1.725 2.086 2.518 2.845 3.552 3.850 21 1.717 2.074 2.508 2.819 3.505 3.792 23 1.714 2.069 2.500 2.807 3.485 3.768 24 1.711 2.064 2.492 2.797 3.467 3.745 25 1.708 2.060 2.485 2.787 3.450 3.725 26 1.701 2.042 <t< th=""><th>11</th><th></th><th>1.796</th><th>2.201</th><th>2.718</th><th>3.106</th><th>4.025</th><th>4.437</th></t<>	11		1.796	2.201	2.718	3.106	4.025	4.437
13 1.771 2.160 2.650 3.012 3.852 4.221 14 1.761 2.145 2.624 2.977 3.787 4.140 15 1.753 2.131 2.602 2.947 3.733 4.073 16 1.746 2.120 2.583 2.921 3.686 4.015 17 1.740 2.110 2.567 2.898 3.646 3.965 18 1.734 2.101 2.552 2.878 3.610 3.922 19 1.729 2.093 2.518 2.861 3.579 3.883 20 1.725 2.086 2.528 2.845 3.552 3.850 21 1.717 2.074 2.500 2.819 3.505 3.708 23 1.714 2.069 2.402 2.797 3.445 3.745 25 1.708 2.060 2.485 2.787 3.460 3.745 26 1.706 2.056 2.473 2.771 3.421 3.690 28 1.701 2.048 <t< th=""><th>12</th><th></th><th>1.782</th><th>2.179</th><th>2.681</th><th>3.055</th><th>3.930</th><th>4.318</th></t<>	12		1.782	2.179	2.681	3.055	3.930	4.318
14 1.761 2.145 2.624 2.977 3.787 4.140 15 1.753 2.131 2.602 2.947 3.733 4.073 16 1.746 2.120 2.583 2.921 3.686 4.015 17 1.740 2.110 2.557 2.898 3.646 3.965 18 1.734 2.101 2.552 2.878 3.610 3.922 19 1.729 2.093 2.539 2.861 3.579 3.883 20 1.725 2.086 2.518 2.845 3.552 3.805 21 1.717 2.074 2.508 2.819 3.505 3.792 23 1.714 2.069 2.500 2.807 3.485 3.768 24 1.711 2.064 2.492 2.797 3.445 3.767 25 1.708 2.060 2.485 2.787 3.450 3.725 26 1.706 2.052 2.473 2.771 3.435 3.707 27 1.703 2.052 <t< th=""><th>13</th><th></th><th>1.771</th><th>2.160</th><th>2.650</th><th>3.012</th><th>3.852</th><th>4.221</th></t<>	13		1.771	2.160	2.650	3.012	3.852	4.221
15 1.753 2.131 2.602 2.947 3.733 4.073 16 1.746 2.120 2.583 2.921 3.686 4.015 17 1.740 2.110 2.567 2.898 3.646 3.965 18 1.734 2.101 2.552 2.878 3.610 3.922 19 1.725 2.086 2.528 2.845 3.552 3.883 20 1.725 2.080 2.518 2.831 3.527 3.819 21 1.712 2.074 2.508 2.819 3.505 3.792 23 1.714 2.064 2.492 2.797 3.450 3.725 26 1.706 2.056 2.473 2.771 3.421 3.690 28 1.701 2.046 2.467 2.763 3.408 3.674 29 1.699 2.045 2.462 2.756 3.396 3.659 30 1.697 2.042 2.457 2.750 3.385 3.646 32 1.694 2.037 <t< th=""><th>14</th><th></th><th>1.761</th><th>2.145</th><th>2.624</th><th>2.977</th><th>3.787</th><th>4.140</th></t<>	14		1.761	2.145	2.624	2.977	3.787	4.140
16 1.746 2.120 2.583 2.921 3.686 4.015 17 1.740 2.110 2.567 2.898 3.646 3.925 19 1.729 2.093 2.539 2.861 3.579 3.883 20 1.725 2.086 2.528 2.845 3.552 3.850 21 1.721 2.080 2.518 2.811 3.505 3.792 23 1.714 2.069 2.500 2.807 3.485 3.768 24 1.711 2.064 2.492 2.797 3.457 3.745 25 1.708 2.060 2.485 2.787 3.450 3.725 26 1.706 2.056 2.479 2.779 3.435 3.707 27 1.703 2.052 2.462 2.756 3.948 3.647 29 1.699 2.045 2.462 2.756 3.348 3.646 32 1.694 2.037 2.449 2.738 3.365 3.622 34 1.691 2.032 <t< th=""><th>15</th><th></th><th>1.753</th><th>2.131</th><th>2.602</th><th>2.947</th><th>3.733</th><th>4.073</th></t<>	15		1.753	2.131	2.602	2.947	3.733	4.073
17 1.740 2.110 2.567 2.898 3.646 3.965 18 1.734 2.101 2.552 2.878 3.610 3.922 19 1.729 2.093 2.539 2.861 3.579 3.883 20 1.725 2.086 2.528 2.845 3.552 3.850 21 1.717 2.074 2.508 2.811 3.527 3.819 23 1.714 2.064 2.492 2.797 3.467 3.745 24 1.711 2.064 2.492 2.797 3.463 3.674 25 1.708 2.060 2.485 2.787 3.450 3.725 26 1.706 2.056 2.479 2.779 3.435 3.690 28 1.701 2.048 2.467 2.763 3.408 3.674 29 1.699 2.045 2.462 2.756 3.385 3.662 34 1.691 2.037 2.449 2.719 3.333 3.562 34 1.691 2.032 <t< th=""><th>16</th><th></th><th>1.746</th><th>2.120</th><th>2.583</th><th>2.921</th><th>3.686</th><th>4.015</th></t<>	16		1.746	2.120	2.583	2.921	3.686	4.015
18 1.734 2.101 2.552 2.878 3.610 3.922 19 1.729 2.093 2.539 2.861 3.579 3.883 20 1.725 2.086 2.528 2.845 3.552 3.850 21 1.717 2.074 2.508 2.819 3.505 3.792 23 1.714 2.069 2.500 2.807 3.485 3.768 24 1.711 2.064 2.492 2.797 3.457 3.745 25 1.708 2.060 2.485 2.787 3.450 3.725 26 1.706 2.056 2.479 2.779 3.435 3.707 27 1.703 2.052 2.473 2.771 3.421 3.690 28 1.701 2.0467 2.756 3.396 3.653 3.622 30 1.697 2.042 2.467 2.756 3.385 3.646 32 1.694 2.037 2.449 2.738 3.333 3.582 38 1.662 2.024 <	17		1.740	2.110	2.567	2.898	3.646	3.965
19 1.729 2.093 2.539 2.861 3.579 3.883 20 1.725 2.086 2.528 2.845 3.552 3.850 21 1.721 2.080 2.518 2.831 3.527 3.819 23 1.714 2.069 2.500 2.807 3.485 3.768 24 1.711 2.064 2.492 2.797 3.467 3.745 25 1.708 2.060 2.485 2.787 3.450 3.725 26 1.706 2.052 2.473 2.771 3.421 3.690 28 1.701 2.048 2.467 2.763 3.408 3.674 29 1.699 2.045 2.462 2.756 3.396 3.652 34 1.691 2.037 2.449 2.738 3.365 3.622 34 1.694 2.037 2.449 2.738 3.365 3.622 34 1.691 2.032 2.441 2.728 3.348 3.601 36 1.688 2.028 <t< th=""><th>18</th><th></th><th>1.734</th><th>2.101</th><th>2.552</th><th>2.878</th><th>3.610</th><th>3.922</th></t<>	18		1.734	2.101	2.552	2.878	3.610	3.922
20 1.725 2.086 2.528 2.845 3.552 3.850 21 1.721 2.080 2.518 2.831 3.527 3.819 22 1.717 2.074 2.508 2.819 3.505 3.792 23 1.714 2.064 2.492 2.807 3.485 3.768 24 1.711 2.064 2.492 2.797 3.467 3.745 25 1.708 2.060 2.485 2.787 3.453 3.707 26 1.706 2.056 2.479 2.779 3.435 3.674 28 1.701 2.048 2.467 2.763 3.408 3.674 29 1.699 2.045 2.462 2.756 3.396 3.659 30 1.697 2.042 2.457 2.750 3.385 3.666 32 1.694 2.037 2.449 2.738 3.365 3.662 34 1.691 2.032 2.441 2.728 3.348 3.601 36 1.688 2.028 <t< th=""><th>19</th><th></th><th>1.729</th><th>2.093</th><th>2.539</th><th>2.861</th><th>3.579</th><th>3.883</th></t<>	19		1.729	2.093	2.539	2.861	3.579	3.883
21 1.721 2.080 2.518 2.831 3.527 3.819 22 1.717 2.074 2.508 2.819 3.505 3.792 23 1.714 2.069 2.500 2.807 3.485 3.768 24 1.711 2.064 2.492 2.797 3.457 3.745 25 1.708 2.060 2.485 2.787 3.450 3.725 26 1.706 2.056 2.479 2.779 3.435 3.707 27 1.703 2.052 2.473 2.763 3.408 3.674 29 1.699 2.045 2.462 2.756 3.396 3.659 30 1.697 2.042 2.457 2.750 3.385 3.646 32 1.694 2.037 2.449 2.738 3.365 3.622 34 1.691 2.032 2.441 2.712 3.313 3.582 38 1.686 2.024 2.429 2.712 3.319 3.566 40 1.682 2.018 <t< th=""><th>20</th><th></th><th>1.725</th><th>2.086</th><th>2.528</th><th>2.845</th><th>3.552</th><th>3.850</th></t<>	20		1.725	2.086	2.528	2.845	3.552	3.850
22 1.717 2.074 2.508 2.819 3.505 3.792 23 1.714 2.069 2.500 2.807 3.485 3.768 24 1.711 2.064 2.492 2.797 3.467 3.745 25 1.708 2.060 2.485 2.787 3.450 3.722 26 1.706 2.056 2.479 2.779 3.435 3.707 27 1.703 2.052 2.473 2.771 3.421 3.690 28 1.701 2.048 2.467 2.763 3.408 3.674 29 1.699 2.045 2.452 2.756 3.396 3.659 30 1.697 2.042 2.457 2.750 3.385 3.646 32 1.694 2.037 2.441 2.728 3.348 3.601 36 1.688 2.028 2.434 2.719 3.333 3.582 38 1.686 2.024 2.429 2.712 3.319 3.566 40 1.684 2.021 <t< th=""><th>21</th><th></th><th>1.721</th><th>2.080</th><th>2.518</th><th>2.831</th><th>3.527</th><th>3.819</th></t<>	21		1.721	2.080	2.518	2.831	3.527	3.819
23 1.714 2.069 2.500 2.807 3.485 3.768 24 1.711 2.064 2.492 2.797 3.467 3.745 25 1.708 2.060 2.485 2.787 3.450 3.725 26 1.706 2.056 2.479 2.779 3.435 3.707 27 1.703 2.052 2.473 2.771 3.421 3.690 28 1.701 2.048 2.467 2.763 3.408 3.674 29 1.699 2.045 2.462 2.756 3.396 3.659 30 1.697 2.042 2.457 2.750 3.385 3.646 32 1.694 2.037 2.449 2.712 3.348 3.601 36 1.688 2.028 2.441 2.728 3.348 3.601 36 1.688 2.021 2.429 2.712 3.319 3.566 40 1.686 2.024 2.429 2.712 3.319 3.566 42 1.682 2.018 <t< th=""><th>22</th><th></th><th>1.717</th><th>2.074</th><th>2.508</th><th>2.819</th><th>3.505</th><th>3.792</th></t<>	22		1.717	2.074	2.508	2.819	3.505	3.792
24 1.711 2.064 2.492 2.797 3.467 3.745 25 1.708 2.060 2.485 2.787 3.450 3.725 26 1.706 2.056 2.479 2.779 3.435 3.707 27 1.701 2.048 2.467 2.763 3.408 3.674 29 1.699 2.045 2.462 2.756 3.396 3.659 30 1.697 2.042 2.457 2.750 3.385 3.646 32 1.694 2.037 2.449 2.738 3.365 3.622 34 1.691 2.032 2.441 2.728 3.348 3.601 36 1.684 2.024 2.429 2.712 3.319 3.562 40 1.684 2.021 2.423 2.704 3.307 3.511 42 1.682 2.018 2.418 2.698 3.296 3.538 44 1.680 2.015 2.414 2.692 3.286 3.526 46 1.677 2.011 <t< th=""><th>23</th><th></th><th>1.714</th><th>2.069</th><th>2.500</th><th>2.807</th><th>3.485</th><th>3.768</th></t<>	23		1.714	2.069	2.500	2.807	3.485	3.768
25 1.708 2.060 2.485 2.787 3.450 3.725 26 1.706 2.056 2.479 2.779 3.435 3.707 27 1.703 2.052 2.473 2.771 3.421 3.690 28 1.701 2.048 2.467 2.763 3.408 3.674 29 1.699 2.045 2.462 2.756 3.396 3.659 30 1.697 2.042 2.457 2.750 3.385 3.646 32 1.694 2.037 2.449 2.738 3.365 3.622 34 1.691 2.032 2.441 2.728 3.348 3.601 36 1.688 2.024 2.429 2.712 3.319 3.562 40 1.682 2.018 2.414 2.698 3.296 3.538 41 1.680 2.015 2.414 2.692 3.286 3.526 46 1.677 2.013 2.410 2.687 3.261 3.496 60 1.671 2.009 <td< th=""><th>24</th><th></th><th>1.711</th><th>2.064</th><th>2.492</th><th>2.797</th><th>3.467</th><th>3.745</th></td<>	24		1.711	2.064	2.492	2.797	3.467	3.745
26 1.706 2.056 2.479 2.779 3.435 3.707 27 1.703 2.052 2.473 2.771 3.421 3.690 28 1.701 2.048 2.467 2.763 3.408 3.674 29 1.699 2.045 2.462 2.756 3.396 3.659 30 1.697 2.042 2.457 2.750 3.385 3.646 32 1.694 2.037 2.449 2.738 3.365 3.622 34 1.691 2.032 2.441 2.728 3.348 3.601 36 1.688 2.028 2.434 2.719 3.333 3.582 38 1.686 2.021 2.423 2.704 3.307 3.551 42 1.682 2.018 2.418 2.698 3.296 3.538 44 1.680 2.015 2.414 2.692 3.286 3.526 46 1.677 2.011 2.407 2.682 3.266 3.505 50 1.676 2.009 <td< th=""><th>25</th><th></th><th>1.708</th><th>2.060</th><th>2.485</th><th>2.787</th><th>3.450</th><th>3.725</th></td<>	25		1.708	2.060	2.485	2.787	3.450	3.725
27 1.703 2.052 2.473 2.771 3.421 3.690 28 1.701 2.048 2.467 2.763 3.408 3.674 29 1.699 2.045 2.462 2.756 3.396 3.659 30 1.697 2.042 2.457 2.750 3.385 3.646 32 1.694 2.037 2.449 2.738 3.365 3.622 34 1.691 2.032 2.441 2.728 3.348 3.601 36 1.688 2.028 2.434 2.719 3.333 3.582 38 1.686 2.024 2.429 2.712 3.319 3.566 40 1.682 2.018 2.418 2.698 3.296 3.538 44 1.680 2.015 2.414 2.692 3.286 3.526 46 1.679 2.013 2.410 2.687 3.277 3.515 48 1.677 2.011 2.407 2.682 3.261 3.496 60 1.671 2.000 <t< th=""><th>26</th><th></th><th>1.706</th><th>2.056</th><th>2.479</th><th>2.779</th><th>3.435</th><th>3.707</th></t<>	26		1.706	2.056	2.479	2.779	3.435	3.707
28 1.701 2.048 2.467 2.763 3.408 3.674 29 1.699 2.045 2.462 2.756 3.396 3.659 30 1.697 2.042 2.457 2.750 3.385 3.646 32 1.694 2.037 2.449 2.738 3.365 3.622 34 1.691 2.032 2.441 2.728 3.348 3.661 36 1.688 2.028 2.434 2.719 3.333 3.582 38 1.686 2.024 2.429 2.712 3.319 3.566 40 1.684 2.021 2.423 2.704 3.307 3.551 42 1.682 2.018 2.418 2.698 3.296 3.538 44 1.680 2.015 2.414 2.692 3.286 3.505 50 1.677 2.011 2.407 2.682 3.269 3.505 50 1.676 2.009 2.403 2.678 3.261 3.496 60 1.671 2.000 <td< th=""><th>27</th><th></th><th>1.703</th><th>2.052</th><th>2.473</th><th>2.771</th><th>3.421</th><th>3.690</th></td<>	27		1.703	2.052	2.473	2.771	3.421	3.690
29 1.699 2.045 2.462 2.756 3.396 3.659 30 1.697 2.042 2.457 2.750 3.385 3.646 32 1.694 2.037 2.449 2.738 3.365 3.622 34 1.691 2.032 2.441 2.728 3.348 3.601 36 1.688 2.028 2.434 2.719 3.333 3.582 38 1.686 2.024 2.429 2.712 3.319 3.566 40 1.684 2.021 2.423 2.704 3.307 3.551 42 1.682 2.018 2.418 2.698 3.296 3.538 44 1.680 2.015 2.414 2.692 3.286 3.505 50 1.677 2.011 2.407 2.682 3.269 3.505 50 1.676 2.009 2.403 2.678 3.261 3.496 60 1.671 2.000 2.390 2.660 3.232 3.460 1.667 1.994 2.381	28		1.701	2.048	2.467	2.763	3.408	3.674
30 1.697 2.042 2.457 2.750 3.385 3.646 32 1.694 2.037 2.449 2.738 3.365 3.622 34 1.691 2.032 2.441 2.728 3.348 3.601 36 1.688 2.028 2.434 2.719 3.333 3.582 38 1.686 2.024 2.429 2.712 3.319 3.566 40 1.684 2.021 2.423 2.704 3.307 3.551 42 1.682 2.018 2.418 2.698 3.296 3.538 44 1.680 2.015 2.414 2.692 3.266 3.526 46 1.677 2.011 2.407 2.682 3.269 3.505 50 1.676 2.009 2.403 2.678 3.261 3.496 60 1.671 2.000 2.390 2.660 3.232 3.460 70 1.667 1.994 2.381 2.648 3.211 3.435 80 1.664 1.990 <td< th=""><th>29</th><th></th><th>1.699</th><th>2.045</th><th>2.462</th><th>2.756</th><th>3.396</th><th>3.659</th></td<>	29		1.699	2.045	2.462	2.756	3.396	3.659
32 1.694 2.037 2.449 2.738 3.365 3.622 34 1.691 2.032 2.441 2.728 3.348 3.601 36 1.688 2.028 2.434 2.719 3.333 3.582 38 1.686 2.024 2.429 2.712 3.319 3.566 40 1.684 2.021 2.423 2.704 3.307 3.551 42 1.682 2.018 2.418 2.698 3.296 3.538 44 1.680 2.015 2.414 2.692 3.286 3.526 46 1.679 2.013 2.410 2.687 3.277 3.515 48 1.677 2.011 2.407 2.682 3.269 3.505 50 1.676 2.009 2.403 2.678 3.261 3.496 60 1.671 2.000 2.390 2.660 3.232 3.460 70 1.667 1.994 2.381 2.648 3.211 3.435 80 1.664 1.990 <td< th=""><th>30</th><th></th><th>1.697</th><th>2.042</th><th>2.457</th><th>2.750</th><th>3.385</th><th>3.646</th></td<>	30		1.697	2.042	2.457	2.750	3.385	3.646
34 1.691 2.032 2.441 2.728 3.348 3.601 36 1.688 2.028 2.434 2.719 3.333 3.582 38 1.686 2.024 2.429 2.712 3.319 3.566 40 1.684 2.021 2.423 2.704 3.307 3.551 42 1.682 2.018 2.418 2.698 3.296 3.538 44 1.680 2.015 2.414 2.692 3.286 3.526 46 1.679 2.013 2.410 2.687 3.277 3.515 48 1.677 2.011 2.407 2.682 3.269 3.505 50 1.676 2.009 2.403 2.678 3.261 3.496 60 1.671 2.000 2.390 2.660 3.232 3.460 70 1.667 1.994 2.381 2.648 3.211 3.435 80 1.664 1.990 2.374 2.639 3.195 3.416 90 1.662 1.987 <td< th=""><th>32</th><th></th><th>1.694</th><th>2.037</th><th>2.449</th><th>2.738</th><th>3.365</th><th>3.622</th></td<>	32		1.694	2.037	2.449	2.738	3.365	3.622
36 1.688 2.028 2.434 2.719 3.333 3.582 38 1.686 2.024 2.429 2.712 3.319 3.566 40 1.684 2.021 2.423 2.704 3.307 3.551 42 1.682 2.018 2.418 2.698 3.296 3.538 44 1.680 2.015 2.414 2.692 3.286 3.526 46 1.679 2.013 2.410 2.687 3.277 3.515 48 1.677 2.011 2.407 2.682 3.269 3.505 50 1.676 2.009 2.403 2.678 3.261 3.496 60 1.671 2.000 2.390 2.660 3.232 3.460 70 1.667 1.994 2.381 2.648 3.211 3.435 80 1.664 1.990 2.374 2.639 3.195 3.416 90 1.662 1.987 2.368 2.617 3.160 3.373 100 1.665 1.976 <t< th=""><th>34</th><th></th><th>1.691</th><th>2.032</th><th>2.441</th><th>2.728</th><th>3.348</th><th>3.601</th></t<>	34		1.691	2.032	2.441	2.728	3.348	3.601
38 1.686 2.024 2.429 2.712 3.319 3.566 40 1.684 2.021 2.423 2.704 3.307 3.551 42 1.682 2.018 2.418 2.698 3.296 3.538 44 1.680 2.015 2.414 2.692 3.286 3.526 46 1.679 2.013 2.410 2.687 3.277 3.515 48 1.677 2.011 2.407 2.682 3.269 3.505 50 1.676 2.009 2.403 2.678 3.261 3.496 60 1.671 2.000 2.390 2.660 3.232 3.460 70 1.667 1.994 2.381 2.648 3.211 3.435 80 1.664 1.990 2.374 2.639 3.195 3.416 90 1.662 1.987 2.368 2.617 3.160 3.373 100 1.665 1.980 2.358 2.617 3.160 3.373 120 1.655 1.976 <	36		1.688	2.028	2.434	2.719	3.333	3.582
40 1.684 2.021 2.423 2.704 5.307 5.351 42 1.682 2.018 2.418 2.698 3.296 3.538 44 1.680 2.015 2.414 2.692 3.286 3.526 46 1.679 2.013 2.410 2.687 3.277 3.515 48 1.677 2.011 2.407 2.682 3.269 3.505 50 1.676 2.009 2.403 2.678 3.261 3.496 60 1.671 2.000 2.390 2.660 3.232 3.460 70 1.667 1.994 2.381 2.648 3.211 3.435 80 1.664 1.990 2.374 2.639 3.195 3.416 90 1.662 1.987 2.368 2.612 3.183 3.402 100 1.660 1.984 2.364 2.626 3.174 3.390 120 1.658 1.980 2.358 2.617 3.160 3.373 150 1.655 1.976	38		1.686	2.024	2.429	2.712	3.319	3.500
42 1.682 2.018 2.418 2.698 3.296 3.538 44 1.680 2.015 2.414 2.692 3.286 3.526 46 1.679 2.013 2.410 2.687 3.277 3.515 48 1.677 2.011 2.407 2.682 3.269 3.505 50 1.676 2.009 2.403 2.678 3.261 3.496 60 1.671 2.000 2.390 2.660 3.232 3.460 70 1.667 1.994 2.381 2.648 3.211 3.435 80 1.664 1.990 2.374 2.639 3.195 3.416 90 1.662 1.987 2.368 2.626 3.174 3.390 100 1.660 1.984 2.364 2.626 3.174 3.390 120 1.658 1.980 2.358 2.617 3.160 3.373 150 1.655 1.976 2.351 2.609 3.145 3.357 200 1.653 1.972	40		1.084	2.021	2.423	2.704	5.507	5.551
44 1.680 2.015 2.414 2.692 3.286 3.526 46 1.679 2.013 2.410 2.687 3.277 3.515 48 1.677 2.011 2.407 2.682 3.269 3.505 50 1.676 2.009 2.403 2.678 3.261 3.496 60 1.671 2.000 2.390 2.660 3.232 3.460 70 1.667 1.994 2.381 2.648 3.211 3.435 80 1.664 1.990 2.374 2.639 3.195 3.416 90 1.662 1.987 2.368 2.626 3.174 3.390 100 1.660 1.984 2.364 2.626 3.174 3.390 120 1.658 1.980 2.358 2.617 3.160 3.373 150 1.655 1.976 2.351 2.609 3.145 3.357 200 1.653 1.972 2.345 2.601 3.131 3.340 300 1.650 1.968	42		1.682	2.018	2.418	2.698	3.296	3.538
46 1.679 2.013 2.410 2.687 3.277 3.513 48 1.677 2.011 2.407 2.682 3.269 3.505 50 1.676 2.009 2.403 2.678 3.261 3.496 60 1.671 2.000 2.390 2.660 3.232 3.460 70 1.667 1.994 2.381 2.648 3.211 3.435 80 1.664 1.990 2.374 2.639 3.195 3.416 90 1.662 1.987 2.368 2.626 3.174 3.390 100 1.660 1.984 2.364 2.626 3.174 3.390 120 1.658 1.980 2.358 2.617 3.160 3.373 150 1.655 1.976 2.351 2.609 3.145 3.340 300 1.650 1.968 2.339 2.592 3.118 3.323 400 1.649 1.966 2.336 2.588 3.111 3.315	44		1.680	2.015	2.414	2.692	3.286	3.526
46 1.677 2.011 2.407 2.082 3.209 3.505 50 1.676 2.009 2.403 2.678 3.261 3.496 60 1.671 2.000 2.390 2.660 3.232 3.460 70 1.667 1.994 2.381 2.648 3.211 3.435 80 1.664 1.990 2.374 2.639 3.195 3.416 90 1.662 1.987 2.368 2.626 3.174 3.390 100 1.660 1.984 2.364 2.626 3.174 3.390 120 1.658 1.980 2.358 2.617 3.160 3.373 150 1.655 1.976 2.351 2.609 3.145 3.357 200 1.653 1.972 2.345 2.601 3.131 3.340 300 1.650 1.968 2.339 2.592 3.118 3.323 400 1.649 1.966 2.336 2.588 3.111 3.315	40		1.677	2.013	2.410	2.087	3.277	3.515
60 1.671 2.000 2.390 2.660 3.232 3.460 70 1.667 1.994 2.381 2.648 3.211 3.435 80 1.664 1.990 2.374 2.639 3.195 3.416 90 1.662 1.987 2.368 2.626 3.174 3.390 100 1.660 1.984 2.364 2.626 3.174 3.390 120 1.658 1.980 2.358 2.617 3.160 3.373 150 1.655 1.976 2.351 2.609 3.145 3.357 200 1.653 1.972 2.345 2.601 3.131 3.340 300 1.650 1.968 2.339 2.592 3.118 3.323 400 1.649 1.966 2.336 2.588 3.111 3.315	40 50		1.676	2.011	2.407	2.082	3 261	3 496
60 1.671 2.000 2.390 2.660 3.232 3.460 70 1.667 1.994 2.381 2.648 3.211 3.435 80 1.664 1.990 2.374 2.639 3.195 3.416 90 1.662 1.987 2.368 2.623 3.183 3.402 100 1.660 1.984 2.364 2.626 3.174 3.390 120 1.658 1.980 2.358 2.617 3.160 3.373 150 1.655 1.976 2.351 2.609 3.145 3.357 200 1.653 1.972 2.345 2.601 3.131 3.340 300 1.650 1.968 2.339 2.592 3.118 3.323 400 1.649 1.966 2.336 2.588 3.111 3.315	60		1.671	2.000	2 200	2.670	2 222	2 460
10 1.007 1.994 2.381 2.048 3.211 3.435 80 1.664 1.990 2.374 2.639 3.195 3.416 90 1.662 1.987 2.368 2.632 3.183 3.402 100 1.660 1.984 2.364 2.626 3.174 3.390 120 1.658 1.980 2.358 2.617 3.160 3.373 150 1.655 1.976 2.351 2.609 3.145 3.357 200 1.653 1.972 2.345 2.601 3.131 3.340 300 1.650 1.968 2.339 2.592 3.118 3.323 400 1.649 1.966 2.336 2.588 3.111 3.315	00 70		1.0/1	2.000	2.390	2.000	3.252	3.400
90 1.662 1.987 2.368 2.632 3.183 3.402 100 1.660 1.984 2.364 2.626 3.174 3.390 120 1.658 1.980 2.358 2.617 3.160 3.373 150 1.655 1.976 2.351 2.609 3.145 3.357 200 1.653 1.972 2.345 2.601 3.131 3.340 300 1.650 1.968 2.339 2.592 3.118 3.323 400 1.649 1.966 2.336 2.588 3.111 3.315	80		1.664	1.994	2.381	2.048	3 195	3 416
100 1.660 1.984 2.364 2.626 3.174 3.390 120 1.658 1.980 2.358 2.617 3.160 3.373 150 1.655 1.976 2.351 2.609 3.145 3.357 200 1.653 1.972 2.345 2.601 3.131 3.340 300 1.650 1.968 2.339 2.592 3.118 3.323 400 1.649 1.966 2.336 2.588 3.111 3.315	90		1.662	1.987	2.368	2.632	3.183	3.402
120 1.658 1.980 2.358 2.617 3.160 3.373 150 1.655 1.976 2.351 2.609 3.145 3.357 200 1.653 1.972 2.345 2.601 3.131 3.340 300 1.650 1.968 2.339 2.592 3.118 3.323 400 1.649 1.966 2.336 2.588 3.111 3.315	100		1.660	1.984	2.364	2.626	3.174	3.390
150 1.655 1.976 2.351 2.609 3.145 3.357 200 1.653 1.972 2.345 2.601 3.131 3.340 300 1.650 1.968 2.339 2.592 3.118 3.323 400 1.649 1.966 2.336 2.588 3.111 3.315	120		1,658	1.980	2.358	2.617	3,160	3.373
200 1.653 1.972 2.345 2.601 3.131 3.340 300 1.650 1.968 2.339 2.592 3.118 3.323 400 1.649 1.966 2.336 2.588 3.111 3.315 *END*	150		1.655	1.976	2.351	2.609	3.145	3.357
300 1.650 1.968 2.339 2.592 3.118 3.323 400 1.649 1.966 2.336 2.588 3.111 3.315 *END*	200		1.653	1.972	2.345	2.601	3.131	3.340
400 1.649 1.966 2.336 2.588 3.111 3.315 *END*	300		1.650	1.968	2.339	2.592	3.118	3.323
END	400		1.649	1.966	2.336	2.588	3.111	3.315
				END)			

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