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$$d) E(\sqrt{s}) = (\sqrt{2} \cdot \frac{1}{36}) + (\sqrt{3} \cdot \frac{2}{36}) + (\sqrt{4} \cdot \frac{3}{36}) + (\sqrt{5} \cdot \frac{4}{36}) + (\sqrt{6} \cdot \frac{5}{36}) + (\sqrt{7} \cdot \frac{6}{36}) \\ + (\sqrt{8} \cdot \frac{7}{36}) + (\sqrt{9} \cdot \frac{8}{36}) + (\sqrt{10} \cdot \frac{9}{36}) + (\sqrt{11} \cdot \frac{10}{36}) + (\sqrt{12} \cdot \frac{11}{36})$$

$$= (0.039 + 0.098 + 0.167 + 0.248 + 0.340 + 0.441$$

$$+ 0.393 + 0.333 + 0.264 + 0.184 + 0.096)$$

$$E(\sqrt{s}) = 2.601$$

$$e) E[(x_1 + x_2 + x_3)^2] = (9 \cdot \frac{1}{216}) + (16 \cdot \frac{2}{216}) + (25 \cdot \frac{6}{216}) + (36 \cdot \frac{10}{216}) + (49 \cdot \frac{15}{216}) + (64 \cdot \frac{21}{216})$$

$$+ (81 \cdot \frac{25}{216}) + (100 \cdot \frac{27}{216}) + (121 \cdot \frac{27}{216}) + (144 \cdot \frac{25}{216}) + (169 \cdot \frac{21}{216})$$

$$+ (196 \cdot \frac{15}{216}) + (225 \cdot \frac{10}{216}) + (256 \cdot \frac{6}{216}) + (289 \cdot \frac{3}{216}) + (324 \cdot \frac{1}{216})$$

$$= (0.0417 + 0.2222 + 0.6944 + 1.6667 + 3.4028 + 6.2222)$$

$$+ 9.3750 + 12.5000 + 15.1250 + 16.6667 + 16.4306$$

$$+ 13.6111 + 10.4167 + 7.1111 + 4.0139 + 1.5000)$$

$$E[(x_1 + x_2 + x_3)^2] = 119$$