Geometry Homework #14 – Answer Key

1) 28 combinations and 20,160 patterns
2) 25,937,424,601
3) 1 8 28 56 70 56 28 8 1
4) 126 teams and 15,120 unique teams
5) $32x^5 - 240x^4y + 720x^3y^2 - 1080x^2y^3 + 810xy^4 - 243y^5$
6) Mean (μ) = 38, Median (*Med*) = 39, Mode (*Mo*) = 45
7) 0, 7 Standard Deviation = $\sqrt{4} = 2$
8) Mean (μ) = 36, Median (*Med*) = 38, Mode (*Mo*) = 41, Range = 60,
Variance (σ^2) = $\frac{1369}{6} = 228.1\overline{6}$, and Standard Deviation (σ) = $\sqrt{228.1\overline{6}} \approx 15.1$
9) Mean (μ) = 48, Median (*Med*) = 52, Mode (*Mo*) = 56
10) 65, 100 Standard Deviation (σ) = $\sqrt{\frac{441}{4}} = \frac{21}{2} = 10.5$
11) Mean (μ) = 27, Median (*Med*) = 27, Mode (*Mo*) = 31, Range = 19,
Variance (σ^2) = $\frac{143}{4} = 35.75$, and Standard Deviation (σ) = $\sqrt{35.75} \approx 6.0$
12) Mean (μ) = 15, Median (*Med*) = 15, Mode (*Mo*) = 17
13) 2, 7 Standard Deviation (σ) = $\sqrt{\frac{16}{9}} = \frac{4}{3} = 1.\overline{3}$
14) Mean (μ) = 5, Median (*Med*) = 5, Mode (*Mo*) = 5, Range = 5,
Variance (σ^2) = $\frac{12}{5} = 2.4$, and Standard Deviation (σ) = $\sqrt{2.4} \approx 1.5$
15) Mean (μ) = 18, Median (*Med*) = 18.5, Mode (*Mo*) = 19
16) Both 87s and 89s Standard Deviation (σ) = $\sqrt{\frac{4}{7}} \approx 0.8$
17) Mean (μ) = 24, Median (*Med*) = 26, Mode (*Mo*) = 28, Range = 15,
Variance (σ^2) = $\frac{80}{3} = 26.\overline{6}$, and Standard Deviation (σ) = $\sqrt{26.\overline{6}} \approx 5.2$
18) Mean (μ) = 74, Median (*Med*) = 72, Mode (*Mo*) = 72
19) None Standard Deviation (σ) = $\sqrt{1} = 1$
20) Mean (μ) = 4, Median (*Med*) = 4, Mode (*Mo*) = 6, Range = 5,
Variance (σ^2) = $\frac{13}{4} = 3.25$, and Standard Deviation (σ) = $\sqrt{3.25} \approx 1.8$