Instructions: Answer each question on loose leaf, quad-ruled (graph paper), headed properly and written in lead-graphite. Remember to fold paper along the center, work exercises in order top to bottom, left column then right column. Staple multiple pages

1. Simplify using exponent laws; write each exponent as positive.

a) $\dfrac{x^3}{x^{-5}}$ b) $\dfrac{x^{-3}}{x^{-5}}$ c) $\dfrac{x^3}{x^5}$ d) $\dfrac{x^5}{x^3}$

2. Estimate the cube roots to the nearest integer.

a) $\sqrt[3]{70}$ b) $\sqrt[3]{270}$ c) $\sqrt[3]{570}$ d) $\sqrt[3]{1670}$

3. Solve the square equations.

a) $x^2 = 361$ b) $n^2 = 1024$ c) $s^2 = \dfrac{324}{576}$ d) $z^2 = -196$

4. A cube has a side length of $3n^4$ units. Write and expression for the Volume of the cube.

5. Simplify using exponent laws; write exponents as positive.

a) $\dfrac{\left(4x^2\right)^3}{8x^8}$ b) $\dfrac{\left(3n^2\right)^2}{18n^4}$

6. Subtract.

a) $7 - 19$ b) $7 - (-19)$ c) $-7 - 19$ d) $-7 - (-19)$

7. All 153 8th graders are going to see "The Hate U Give" this Friday;
a) Name all the number families the number of buses we need belongs to.
b) Name all the number families the average number of students per bus belongs to.
Justify your arguments with evidence!

8. Compute: $16 - 2^3 \left(7 \div 6 \bullet 2 + 3\right) - 5$