Do all problems (30 points total). Place your answers in the spaces provided. You must show your work clearly in order to receive credit. No calculators allowed.

1. (3 pts) In expanded form, \(541 = \underline{500} + \underline{40} + \underline{1}\).

2. (9 pts) For parts (a), (b), and (c) below, make up a first grade word problem that can be solved using the set model and...

   (a) the part-whole interpretation for finding \(10 - 4\).

   \(\text{E.g., There are 10 kids in a room. 4 are girls. How many boys?}\)

   (b) the take-away interpretation for \(20 - 7\).

   \(\text{E.g., There are 20 total points on a quiz. Sam lost 7 points. How many points did he get?}\)

   (c) give The comparison interpretation for \(12 - 7\).

   \(\text{E.g., Butch has 12 rocks and Cleaver has 7 rocks. How many more rocks does Butch have than Cleaver?}\)

3. (6 pts) For parts (a), (b), and (c) below, state the name of the arithmetic property used:

   (a) \(4 \times 3 = 3 \times 4\). \text{Commutative}

   (b) \(4 \times 1 = 4\). \text{Multiplicative identity}

   (c) \(7 \times (3 + 5) = (7 \times 3) + (7 \times 5)\). \text{Distributive}
4. (2 pts) In the problem 44 ÷ 11 = 4, the number 44 is called the \textbf{dividend}\textbf{\underline{\hspace{2cm}}} and the number 11 is called the \textbf{divisor}\textbf{\underline{\hspace{3cm}}}.

5. (6 pts) Consider the following problem: Jim tied 30 candles into 6 equal bundles. How many candles are in each bundle?

(a) \underline{PARTITIVE} or MEASUREMENT interpretation of division? (circle one)

(b) Give a complete Teacher’s Solution to this problem.

\[
\begin{align*}
30 \div 6 &= 5 \\
\text{There are 5 candles in each bundle.}
\end{align*}
\]

6. (4 pts) Compute mentally but indicate equalities that demonstrate how you thought about the problem (no scratch work).

(a) \(98 + 107 = 100 + 105 = 205\)

(b) \(18 + 48 + 182 = 182 + 18 + 48 = 200 + 48 = 248\)

(c) \(25 \times 88 = 100 \times 22 = 2200\)

(d) \(56 - 38 = 58 - 40 = 18\)