

Name \_\_\_\_\_

## AI Model Efficiency Math Problems

**Instructions:** Solve each problem. Show your work when possible.  
Round answers to whole numbers if needed.



**Problem 1** - A small model takes **2 GB of storage**, while a big model takes **200 GB**. How many small models could fit in the same space as one big model?

---

**Problem 2** - A laptop has **64 GB of free storage**. How many small models (2 GB each) could fit on the laptop? Could a big model (200 GB) fit at all?

---

**Problem 3** - A small model responds in **1 second**, while a big model responds in **5 seconds**. If you ask each model **20 questions**, how much total time will each take?

---

**Problem 4** - A smartphone can only hold **10 GB** of apps and data. Could it store one big model (200 GB)? How many small models (2 GB each) could it hold instead?

---

**Problem 5** - One server can run **4 big models** at the same time. How many small models could it run if each small model is 2 GB and each big model is 200 GB?

---

**Problem 6** - A company has a storage system of **1,000 GB**. They want to store as many small models as possible. How many can they store? How many big models can they store?

---

**Problem 7** - A small model needs **0.5 kilowatts per hour** of electricity to run, while a big model needs **5 kilowatts per hour**. How much electricity would each use in **10 hours**?

---

**Problem 8** - A teacher has **30 minutes** for a class activity. A small model responds in 1 second, and a big model responds in 5 seconds. How many questions can students ask each model in the time limit (if one question is asked immediately after another)?

---