Name:

Block: Date:

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| **Math 8 – Unit Assignment (Exponents)** |

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| * Copythe**original**question andshow your **intermediate**steps to receive full credit
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1. Express the following in **BOTH** **exponential** form and **standard** form:
2. 5 • 5 • 5 • 5 • 5 c) (–3) • (–3) • (–3) • (–3) • (–3) • (–3)
3. ($\frac{1}{2}$) • ($\frac{1}{2}$) • ($\frac{1}{2}$) d) 1 • 1 • 1 • 1 • 1 • 1 • 1 • 1 • 1 • 1 • 1 • 1
4. Show your **intermediate** steps to **compare** the following exponents:
5. 73 or 37 b) 83 or 29 c) –210 or (–3)4
6. Show the **prime factorization** in both **expanded** and **exponential** form :
7. 60 b) 450 c) 800
8. Show the **standard form** of the following numbers:
9. 2 • 3 • 5 • 7 •11 • 13 b) 22 • 32 • 52 c) 23 • 34 • 56
10. Show **how** you could estimate $\sqrt{90}$ **without** using a calculator.
11. Show **how** you could estimate $\sqrt[3]{90}$ **without** using a calculator.
12. Follow the **Order of Operations** to solve the following equations:
13. 3 + 72 – 24 • 3 d) 4 + 6$\sqrt{4}$ – 8 • 4

1. 4$\sqrt{25}$ – 2 • 32  e) 9 + 8$\sqrt{16}$ – 2(–3)2
2. 5(3 – 5)2 + 4(–8)
3. Explain **WHY** –510 and (–5)10 produce **different** answers.
4. Every **10 minutes** the number of people arriving at Katy Perry’s outdoor concert **doubles**. If **20** people are already there, how many people will be at the concert in **2 hours**?
5. In science a half–life describes the amount of time it takes for **half** of a nuclear isotope to change into another isotope. If I start with **300 grams** of uranium, how much will be remaining after **6 half-lives**?

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| **Formula 🡪 Substitute 🡪 Solve / Steps 🡪 Answer (Units)** |



c2 = a2 + b2 b2 = c2 – a2 a2 = c2 – b2

* Determine the length of the **hypotenuse** in the following right triangles:
1. side lengths of **18 mm** and **24 mm**
2. side lengths of **6 m** and **7 m**
3. side lengths of **8 m** and **8 m**
* Determine the length of the **missing side** in the following right triangles:
1. side length of **8 cm** and a **hypotenuse** of **17 cm**
2. side length of **1 m** and a **hypotenuse** of **3 m**
3. side length of **10 m** and a hypotenuse of **25 cm**
4. Stanley was building a rectangular wall that measured **8 ft** by **16 ft**. He measured the diagonal as **18 ft**. Were his corners true (squared)?
5. Two zipline towers are **250 m** apart. If the change in elevation is **25 m**, what is the **length** of the zipline?
6. A **6 m** ladder is leaned against a wall so that its base is **2 m** from the wall. How far **up** the wall does the ladder reach?
7. A **10 m** wire is used to anchor a tree. If the wire reaches **4 m** up the tree, how **far** from its base is the wire anchored?
8. A quarter–section of land is a square that is **647 220.25** m2 in area. What is the **side length** of the square?
9. Carly’s Copper melts down approximately **350 cm3** of copper each day to make jewelry. If they were to take all of the copper melted during June (**30 days**) and form it into a **cube**, what is the length of **each side**?