HPS Significant Figures Practice Name Key 2020 Per ____

OBJECTIVE: count and calculate with significant figures.

BACKGROUND INFO: Are they significant?

1. Non-zero digits, sandwiched zeros, and scientific notation = YES!
2. Leading zeros = NO!
3. Trailing zeros? If they follow a non-zero digit and are after a decimal = YES!

PRACTICE:

↑ $ to be ↑ Precise!
±1g $20
±.1g $200
±.01g $2,000
±.001g $10,000

1. How many significant figures are in the following measurements?

a. 1200 kg 2

b. 5060800 joules 5

c. 0.002003 g 4

d. 0.0005660 L 4

e. 20005 sec. 5

f. 2.30×10^4 g 3

g. 2.3×10^5 sec. 2

h. 0.002300 g 4

2. Perform the following calculations and round the answer to the correct place using significant figure rules. All values represent measurements.

a. $1.72 \times 0.007 = .01$

b. $627.1 \times 1.72 = 1080$

c. $704.050 \div 0.15 = 4700$

d. $201 \times 0.015 = 3.0$

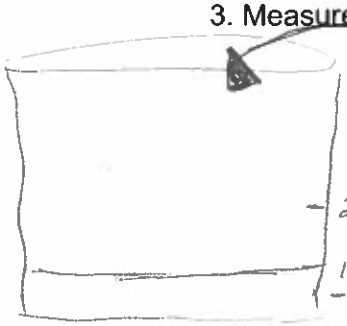
e. $350 \div 7.89 = 44$

f. $(7.0 \times 10^{-2}) \times (3.00 \times 10^4) = 2100$ or 2.1×10^3

g. $2.003 \times 10^6 + 2.10 \times 10^{-2} = 2.003 \times 10^6$

h. $56.000\text{g} \div 0.20 = 280$

3. Measurement Review: Game Link



490 gal

10,000 gal + 490 gal

10,000 gal + 490 gal

20,000 gal

10,000 gal

10,000 ± 5,000 gal

BAD MEASUREMENT!

2003000
+ 0.0210
2003000.0210

your answer cannot be more precise than what you started with.