

Fractions, Decimals, and Percents
MCAS Worksheet 1

Name _____

- 1** If $x \neq 0$, which of the following expressions belongs in the box below to make the equation true?

$$(-2x) \cdot \boxed{?} = 1$$

- A. $-\frac{1}{2x}$
- B. $-\frac{x}{2}$
- C. $\frac{2}{x}$
- D. $2x$

Mark your answer here: 1. (A)(B)(C)(D)

- 2** Kelly wants to buy a tool set that is on sale at a hardware store. The price of each tool set will be decreased by 8% each morning just before the store opens. The sale will last for 7 days, or until all the sets are sold.

After the first reduction on Monday, the price of each set was \$135.

If Kelly wants to wait until the first day that the price is \$100 or less, on which day should she buy her tool set, if one is still available?

- A. Wednesday
- B. Thursday
- C. Friday
- D. Saturday

Mark your answer here: 2. (A)(B)(C)(D)



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3

In which equation below is the solution equal to the multiplicative inverse of $\frac{2}{3}$?

A. $\frac{2}{3} \cdot r = 1$

B. $\frac{2}{3} \cdot r = \frac{2}{3}$

C. $\frac{2}{3} \cdot r = 0$

D. $\frac{2}{3} \cdot r = -1$

Mark your answer here: 3. (A)(B)(C)(D)

4

Of the people in attendance at a recent baseball game,

- one-third had grandstand tickets,
- one-fourth had bleacher tickets, and
- the remaining 11,250 people in attendance had other tickets.

What was the total number of people in attendance at the game?

A. 27,000

B. 20,000

C. 16,000

D. 18,000

Mark your answer here: 4. (A)(B)(C)(D)

- 5** The chart below separates the number of students majoring in math/science from students pursuing other majors at a state college.

Mark your answer here: 5. Ⓐ Ⓑ Ⓒ Ⓓ

Students' Majors by Class

	Freshmen	Sophomores	Juniors	Seniors
Math/Science Majors	260	310	200	330
Other Majors	1390	1510	1450	1550

What percent of the math/science majors are seniors?

- A. 43%
- B. 30%
- C. 21%
- D. 5%

- 6** On an airline, approximately 10% of the airline passengers who are booked for a flight do not show up for the flight. The airline has booked 160 passengers for a flight with maximum seating of 135. How many of the 160 passengers booked for this flight will **not** have a seat, assuming 10% of the booked passengers do not show up?

Write your answer here:



Directions: For the problem below, use a separate piece of paper to write your answers. Your teacher will not count anything you write on this page.

7

In a report on the history of irrational numbers, Celine compared three different values that have been used to approximate π . The values are listed below.

$\left(\frac{4}{3}\right)^4$ Egyptian approximation

$\frac{355}{113}$ Chinese approximation

$\frac{22}{7}$ Archimedes' approximation (Greek)

- a. Celine compared $\left(\frac{4}{3}\right)^4$, the approximation used by the Egyptians, to $\frac{22}{7}$, a value that she often uses for π . She converted both $\left(\frac{4}{3}\right)^4$ and $\frac{22}{7}$ to decimals rounded to four decimal places (nearest ten-thousandth). To the nearest ten-thousandth, what is the absolute value of the difference between $\left(\frac{4}{3}\right)^4$ and $\frac{22}{7}$? Show or explain how you got your answer.
- b. Celine also compared $\frac{355}{113}$, the approximation used by the Chinese, to $\frac{22}{7}$. She converted $\frac{355}{113}$ to a decimal rounded to four decimal places (nearest ten-thousandth). To the nearest ten-thousandth, what is the absolute value of the difference between $\frac{355}{113}$ and $\frac{22}{7}$? Show or explain how you got your answer.
- c. Celine knows that $\pi \approx 3.1415927$. Place the four numbers, $\left(\frac{4}{3}\right)^4$, $\frac{355}{113}$, $\frac{22}{7}$, and π in order from **least** to **greatest**. Explain your reasoning.