
Homework Problems

Lecture 1

We will focus on the highlighted questions below.

<u>Problems</u>	<u>Concept</u>
1. 5 is a factor/multiple of 10.	Factors/Multiples
2. 10 is a multiple/factor of 5.	
3. True/False: The sum of two multiples of 6 must be a multiple of 12.	
4. Is every multiple of 8 a multiple of 4?	
5. Is every multiple of 4 a multiple of 8?	
6. Every number is both a factor and a multiple of _____.	
7. Is 1 prime?	Factors/Multiples
8. What are the prime factors of 48?	
9. If the numbers 70 and 105 are both multiples of a prime number n , how many possible values are there for n ?	Factors/Multiples
10. How many positive integers less than 50 are multiples of 4, but not multiples of 6?	Factors/Multiples
11. If a and b are both odd integers and c is an even integer, then all of the following could be true EXCEPT: <i>a.</i> $a + b = c$ <i>b.</i> $ac = a + b$ <i>c.</i> $bc = a$ <i>d.</i> $b - c = a$ <i>e.</i> $ac/b = bc$	Factors/Multiples
12. $\frac{2}{5} + \frac{1}{7} \div \frac{3}{4} =$	Fractions
13. What is 30% of 50?	Percents
14. $(a^2 + a^3)/a^7 =$	Exponents
15. $\sqrt[3]{343} =$	Exponents
16. $4913^{\frac{1}{3}} =$	Exponents
17. If 125 percent of x is 150, what is x percent of 75?	Percents

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18. A co-ed soccer team has twice as many men as women. The players line up for inspection with a woman at the front of the line. Which of the following must be true?
- a. The second person in line is a woman.
 - b. The last person in line is a woman.
 - c. There are more women than men on the team.
 - d. There are at least 2 women standing next to each other
 - e. There are at least 2 men standing next to each other.
19. In a certain alloy, the ratio by weight of copper to brass is 4 to 9. If the alloy contains 16 pounds of copper, how many pounds of brass does it contain?
20. It takes 4 minutes for Andy to drive a mile and it takes 6 minutes for Diane to drive a mile. If Andy and Diane both drive for 1 hour, how many more miles will Andy drive than Diane?
21. A certain survey was distributed to 2,400 people, 85% of whom responded. Of the respondents, 60% answered a particular yes-no question "no", while 352 left that question blank. How many people answered "yes" to that question?
22. If a is a positive number, which of the following must be true?
- a. $2a$ is negative
 - b. $a - 3$ is positive
 - c. $100 - a$ is positive
 - d. $3 - a$ is negative
23. Between which two digits of the number 987654 should a decimal point be placed so that the value of the resulting number is equal to 9.87654×10^4 ?
24. If an object travels at 5 feet per minute, how many feet does it travel in 2 seconds?

Ratio

Ratio

Rates

Multiple Signs

Scientific Notation

Rate

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25. If Jorge earns \$2000 a month and spends \$600 a month on rent, what percent of Jorge's monthly earnings does he spend on rent? Percents
26. At a carnival, there are m families with n children per family. If a total of b balloons are distributed equally among the children, how many balloons are there for each child? Ratio
27. Which of the following is equal in value to plus (200 percent of 1)? Percent
- a. 150 percent of 1
 - b. 200 percent of 1
 - c. 250 percent of 1
 - d. 300 percent of 1
 - e. 350 percent of 1
28. If x is an integer between 300 and 400 that is divisible by 3, 6, and 9, what is one possible value of x ? Factors/Multiples
29. Andy, Bobby, and Carol each walked into a candy store with a different amount of money. Andy and Bobby had 33 cents together, Bobby and Carol had 56 cents together, and Carol and Andy had 41 cents together. If they each paid for 5 cents worth of candy, how much money did Andy leave the candy store with? Complex Fractions, Exponents
30. Larry spent $\frac{1}{4}$ of his weekly allowance on Monday and the rest on Tuesday, Wednesday, Thursday, and Friday of that week. If he spent an equal amount on each of those four days, what fraction of his weekly allowance did Larry spend on Friday? Percent
31. Mona is pulling out gummy bears from a small pouch. In her first handful, she pulled out 5 red bears and 3 yellow ones. In her second handful, 40 percent of the bears were red. If after both handfuls, 50 percent of all the bears pulled were red, how many bears did Mona pull out in her second handful if she only pulled whole bears? Series

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| 32. Cauky the Clown is preparing 9 jars of jellybeans for Big Hoopla Circus's jellybean guessing contest. If she puts 20 jellybeans into the first jar and each successive jar contains twice as many as the one before it, how many jellybeans will Cauky put in the 9th jar? | Exponents |
| 33. What is the 100th term after the decimal point when you divide 4 by 13? | Percents |
| 34. $(27 \cdot 32) - (-27 \cdot -32) =$ | Positives and Negatives |
| 35. From his house, it takes Billy 16 minutes to walk to the museum. Walking at the same speed, it takes him 22 minutes to walk from his house to the park. If Billy's house is 2 miles from the museum, how far, in miles, is it from the park? | Rate |
| 36. $16 - 4 \cdot 5 + 2 =$ | Orders of Operation |
| 37. On Monday morning, Sarah sold 14 boxes of Girl Scout cookies before lunch. If the cookies are \$3.25 a box and Sarah needs to sell at least \$80 worth for the day, how many more boxes must Sarah sell after lunch in order to meet her goal? | Ratios |
| 38. A cake recipe calls for 4 cups of flour, 1 cup of sugar, 2 cups of water, and 2 cups of frosting. If Eileen baked several cakes and used a total of 45 cups of ingredients, how many cups of frosting did she use? | Ratios |
| 39. Mario has a crate of 400 cherries that weighs 22 pounds. If the empty crate weighs 2 pounds and he gives 145 cherries away to his friend Sandra, approximately how many pounds do the remaining cherries weigh? | Ratios |