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**Mathematics Grade 4 Unit 5 Study Guide**

**Fractions and Decimals**

NF.5

**1.** Which answer choice correctly represents 6 tenths and 4 hundredths?



A.



B.



C.

NF.5

**2.** At Frank's first swim meet of the season, he swam in the freestyle race. He swam $\frac{3}{10}$ of the length of the pool before taking his first breath. He then swam $\frac{40}{100}$ more and took his second breath. Then, he swam $\frac{1}{10}$ before his coach blew the whistle. How far did Frank swim?

NF.5

**3.** At a school track meet, Sandy jumped $\frac{5}{10}$ of a meter in the long jump competition. The judge recorded her score as $\frac{50}{100}$ of a meter. Sandy told the judge that he wrote her score down incorrectly. Who is correct?

NF.5

**4.** For her family's party, Lisa bought $\frac{3}{10}$ of a pound of turkey and $\frac{60}{100}$ of a pound of ham.

**Part A:** How many pounds of meat did Lisa buy? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Part B:** Justify your answer using words, numbers, or a model.

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NF.5

**5.** Determine the sum of 6 tenths and 30 hundredths. Write an **equation** and then solve.

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NF.6

**6.** Mark's mom has 100 employees and only 60 of them work on Sundays. What decimal shows how many employees do **NOT** work on Sundays?

NF.6

**7.** An auditorium has 10 rows of 10 seats. For an upcoming concert, 2 rows of seats have been completely sold out, while one row only has 7 seats sold.

**Part A:** Shade in the grid to show the number of seats that have been sold.

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**Part B:** What **fraction** of the total seats have **NOT** been sold? \_\_\_\_\_\_\_\_\_\_\_\_\_\_

NF.6

**8.** The sum of the numbers in the table below is equal to one whole. What is the value of the variable ***d*** ? Write your answer as a **decimal**.

|  |  |  |  |
| --- | --- | --- | --- |
| $$\frac{10}{100}$$ | ***d*** | 0.27 | $$\frac{3}{10}$$ |

 = 1

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

NF.6

**9.** Mary claims that 0.37 is equal to $\frac{37}{100}$. Jason says that 37 is equal to$ \frac{37}{100}$.

**Part A:** Who is correct?

**Part B:** Explain your reasoning.

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NF.7

**10.** Compare the two models below.



NF.7

**11.** Shade 0.5 and 0.55 on the models below. Write the appropriate decimal on the line below each grid. Use <, >, or = to compare the decimals.

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 **0.5** **0.55**

NF.7

**12.** Place the following numbers in the correct location on the number line below.

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| --- | --- | --- | --- | --- | --- |
| 0.1 | $$\frac{3}{10}$$ | 1 $\frac{1}{2}$ | 0.7 | $$\frac{5}{10}$$ | $$\frac{10}{10}$$ |



NF.7

**13.** The table below shows the miles students ran at track practice.

|  |  |
| --- | --- |
| **Student** | **Miles** |
| Michael | 0.09 |
| Tyler | 0.5 |
| Francis | 0.01 |
| Susana | 0.67 |

**Part A:** On the number line below, plot the distance each student ran. Include benchmarks.



**Part B:** Justify how you knew where to place each runner on the number line.

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Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Mathematics Grade 4 Unit 5 Post Assessment**

**Fractions and Decimals**

NF.5

**1.** Which answer choice correctly represents 6 tenths and 40 hundredths?



A.



B.



C.

NF.5

**2.** At Frank's first swim meet of the season, he swam in the freestyle race. He swam $\frac{4}{10}$ of the length of the pool before taking his first breath. He then swam $\frac{20}{100}$ more and took his second breath. Then, he swam $\frac{2}{10}$ before his coach blew the whistle. How far did Frank swim?

A. Frank swam $\frac{26}{100}$ of the pool.

B. Frank swam $\frac{80}{100}$ of the pool.

C. Frank swam $\frac{80}{1000}$ of the pool.

D. Frank swam the entire length of the pool.

NF.5

**3.** At a school track meet, Sandy jumped $\frac{4}{10}$ of a meter in the long jump competition. The judge recorded her score as $\frac{40}{100}$ of a meter. Sandy told the judge that he wrote her score down incorrectly. Who is correct?

A. Sandy is correct because $\frac{4}{10} $is not equal to $\frac{40}{100}$.

B. Sandy is correct because the only way to record her score is $\frac{4}{10}$.

C. The judge is correct because $\frac{4}{10}$ is equivalent to $\frac{40}{100}$.

D. The judge is correct because $\frac{4}{10} $is equivalent to $\frac{4}{100}$.

NF.5

**4.** For her family's party, Lisa bought $\frac{4}{10}$ of a pound of turkey and $\frac{50}{100}$ of a pound of ham.

**Part A:** How many pounds of meat did Lisa buy? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Part B:** Justify your answer using words, numbers, or a model.

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NF.5

**5.** Determine the sum of 3 tenths and 50 hundredths. Write an **equation** and then solve.

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NF.6

**6.** Mark's mom has 100 employees and only 30 of them work on Saturdays. What decimal shows how many employees do **NOT** work on Saturdays?

A. 0.03 of the employees do not work on Saturdays

B. 0.07 of the employees do not work on Saturdays

C. 0.3 of the employees do not work on Saturdays

D. 0.7 of the employees do not work on Saturdays

NF.6

**7.** An auditorium has 10 rows of 10 seats. For an upcoming concert, 6 rows of seats have been completely sold out, while one row only has 3 seats sold.

**Part A:** Shade in the grid to show the number of seats that have been sold.

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**Part B:** What **fraction** of the total seats have **NOT** been sold? \_\_\_\_\_\_\_\_\_\_\_\_\_\_

NF.6

**8.** The sum of the numbers in the table below is equal to one whole. What is the value of the variable ***d*** ? Write your answer as a **decimal**.

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| --- | --- | --- | --- |
| $$\frac{30}{100}$$ | ***d*** | 0.11 | $$\frac{2}{10}$$ |

 = 1

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NF.6

**9.** Mary claims that 0.52 is equal to $\frac{52}{100}$. Jason says that 52 is equal to$ \frac{52}{100}$.

**Part A:** Who is correct?

A. Only Mary is correct.

B. Only Jason is correct.

C. Both are correct.

D. Neither is correct.

**Part B:** Explain your reasoning.

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NF.7

**10.** Compare the two models below.



A. 0.2 < 0.20

B. 0.2 > 0.20

C. 0.2 = 0.20

D. 0.2 = 0.02

NF.7

**11.** Shade 0.7 and 0.77 on the models below. Write the appropriate decimal on the line below each grid. Use <, >, or = to compare the decimals.

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 **0.7** **0.77**

NF.7

**12.** Place the following numbers in the correct location on the number line below.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 0.2 | $$\frac{2}{10}$$ | 1 $\frac{1}{2}$ | 0.9 | $$\frac{15}{10}$$ | $$\frac{10}{10}$$ |



NF.7

**13.** The table below shows the miles students ran at track practice.

|  |  |
| --- | --- |
| **Student** | **Miles** |
| Michael | 0.08 |
| Tyler | 0.7 |
| Francis | 0.05 |
| Susana | 0.46 |

**Part A:** On the number line below, plot the distance each student ran. Include benchmarks.



**Part B:** Justify how you knew where to place each runner on the number line.

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# **Mathematics Grade 4 Unit 5 Pre/Post Assessment ANSWER KEY**

|  |  |  |
| --- | --- | --- |
|  | C | 1 pt. |
|  | B | 1 pt. |
|  | C | 1 pt. |
|  | Part A: $\frac{9}{10}$ or $\frac{90}{100}$ poundsPart B: Answers will vary. | Part A: 1 pt.Part B: 1 pt. |
|  | $\frac{3}{10}$ + $\frac{50}{100}$ = $\frac{8}{10}$ or $\frac{80}{100}$ (1 point for equation, 1 point for correct answer in either form)(Although we have not taught adding of decimals, accept 0.3 + 0.50 = 0.8 or 0.80 as well if students choose to solve that way)  | 2 pts. |
|  |  D | 1 pt. |
|  | Part A: The grid should have 63 blocks shaded. Part B: $\frac{37}{100}$ (only the fraction form is acceptable due to directions) | Part A: 1 pt.Part B: 1 pt. |
|  | 0.39 (only the decimal form is acceptable due to directions)(1 point for work, 1 point for correct answer) | 2 pts. |
|  | Part A: APart B: Answers will vary.  | Part A: 1 pt.Part B: 1 pt. |
|  | C | 1 pt. |
|  | Shading should be done appropriately.0.7 < 0.77(1 point for shading correctly, 1 point for comparing correctly) | 2 pts. |
|  | The numbers should be placed onto the number line in the following order with appropriate spacing: 0.2 and $\frac{2}{10}$ together, 0.9, $\frac{10}{10}$ and 1$\frac{1}{2}$ and $\frac{15}{10}$ together.(a half point for each correctly-placed number) | 3 pts. |
|  | Part A: The numbers should be placed on the number line in the following order with appropriate spacing: 0.05, 0.08, 0.46, 0.7. Benchmarks should include 0, 1, and all tenths.(1/2 point each for placing each number correctly, 1 point for benchmarks)Part B: Answers will vary. | Part A: 3 pts.Part B: 1 pt. |

**Grade 4 Math Unit 5: Fractions and Decimals**

Standards Report

Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| Standards | Item Number | Point Values |
| **MGSE4.NF.5:** Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100. | 1 | \_\_\_\_/1 |
| 2 | \_\_\_\_/1 |
| 3 | \_\_\_\_/1 |
| 4A | \_\_\_\_/1 |
| 4B | \_\_\_\_/1 |
| 5 | \_\_\_\_/2 |
| **MGSE4.NF.6:** Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram. | 6 | \_\_\_\_/1 |
| 7A | \_\_\_\_/1 |
| 7B | \_\_\_\_/1 |
| 8 | \_\_\_\_/2 |
| 9A | \_\_\_\_/1 |
| 9B | \_\_\_\_/1 |
| **MGSE4.NF.7:** Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual model. Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.  | 10 | \_\_\_\_/1 |
| 11 | \_\_\_\_/2 |
| 12 | \_\_\_\_/3 |
| 13A | \_\_\_\_/3 |
| 13B | \_\_\_\_/1 |
| **Scoring:**  24/24 = 100%23/24 = 96%22/24 = 92% | 21/24 = 88%20/24 = 83%19/24 = 79% | 18/24 = 75%17/24 = 71%16/24 = 67% | **Total Score**\_\_\_\_/24 |
| **Comments:** |