

8.NS.1

SELECTED RESPONSE

Select the correct answer.

- What is the decimal equivalent of the rational number $-\frac{1}{8}$?

(A) -0.125 (C) -1.8
(B) -1.25 (D) -12.5
- What is the decimal equivalent of the rational number $\frac{6}{11}$?

(A) 0.54 (C) $0.\overline{54}$
(B) $0.5\overline{4}$ (D) $1.8\overline{3}$
- What rational number has -0.875 as its decimal equivalent?

(A) $-\frac{7}{80}$ (C) $-\frac{7}{8}$
(B) $-\frac{4}{5}$ (D) $-\frac{35}{4}$
- Pierre worked $5\frac{3}{8}$ hours today. What is the decimal equivalent of $5\frac{3}{8}$?

(A) 5.25 (C) 5.375
(B) $5.\overline{3}$ (D) 5.625

Select all correct answers.

- A company can hire 99 new employees. There are 243 applicants. Which of the following rational numbers represent the ratio of applicants to available positions?

(A) 2.45 (D) $\frac{11}{27}$
(B) $2.4\overline{5}$ (E) $\frac{27}{11}$
(C) $2.\overline{45}$ (F) $2\frac{5}{11}$

- Which rational numbers fall between 2.7 and 2.8 on a number line?

(A) $\frac{11}{4}$ (D) $2\frac{41}{50}$
(B) $2\frac{19}{25}$ (E) $\frac{277}{100}$
(C) $\frac{21}{8}$ (F) $2\frac{5}{6}$

Match each rational number with its decimal equivalent.

- | | |
|------------------------------|-----------------------|
| _____ 7. $-\frac{41}{33}$ | A -1.024 |
| _____ 8. $-\frac{112}{90}$ | B $-1.02\overline{4}$ |
| _____ 9. $-\frac{31}{25}$ | C -1.204 |
| _____ 10. $-\frac{338}{330}$ | D -1.24 |
| _____ 11. $-\frac{128}{125}$ | E $-1.2\overline{4}$ |
| | F $-1.2\overline{4}$ |

CONSTRUCTED RESPONSE

- On a final exam, Alex answered 21 out of 25 questions correctly. He needs to score at least 80% to receive a B in the course.
 - Written as a decimal, what portion of Alex's answers were correct?

- How many questions need to be answered correctly to receive a score of 80%? Show your work.

- Did Alex score at least 80% on his final exam? Give two reasons why.

13. Does $0.010110111011110\dots$ represent a rational number or an irrational number? Explain your reasoning.

14. A local middle school has 99 computers and 333 students. What is the number of students per computer at the school? Write your answer as both a rational number in simplest form and a decimal.

15. What rational number has $0.3\overline{4}$ as its decimal equivalent? Show your work.

16. Sometimes the rational number $\frac{22}{7}$ is used as an approximation of the irrational number π , whose decimal form is $3.14159\dots$, which neither terminates nor repeats. To how many decimal places does the decimal form of $\frac{22}{7}$ agree with the decimal form of π ?

17. Let n be the decimal form of a rational number $\frac{a}{b}$, where a and b are nonzero integers.

a. If n is a terminating decimal, what is true about the factors of b ? Explain.

b. If n is a repeating decimal, what can be said about the number of digits in the repeating block? Explain.

18. Write the decimal equivalents of $\frac{1}{11}$, $\frac{2}{11}$, and $\frac{3}{11}$. Then use the results to predict the decimal equivalent of $\frac{9}{11}$.

19. On a recent math test Marcos was asked to find the decimal equivalent of $\frac{22}{25}$.

Marcos gave the answer $\frac{22}{25} = 1.\overline{136}$.

a. Find the decimal equivalent of $\frac{22}{25}$ and decide whether Marcos gave a correct or incorrect answer.

b. What mistake did Marcos most likely make, if any?
