

Number Systems Summative Assessment Study Guide

Complete the study guide, and be ready to take a test after Thanksgiving break.

SECTION A

1. What is the value of $|7|$?

absolute value = distance from zero
7

For #2 and #3, write whether each sentence is true or false. If false, replace the underlined word or phrase to make a true sentence.

2. To add integers with different signs, subtract the values and keep the sign of the smallest value.

False largest

3. When you multiply numbers with the same signs, the answer will always be negative.

False positive

4. Write an example of two **opposite numbers**. Explain what happens when you add the two values.

Answers will vary: $-2 + 2 = 0$

When you add two opposite numbers, the values cancel out and equal zero.

SECTION B

5. $(-6) + (-10)$ ← same signs, add values

$$-(6+10) = \boxed{-16}$$

6. $9 + (-5)$ ← different signs, subtract

$$9 - 5 = 4$$

$$\text{sign of largest value} = \boxed{+4}$$

7. $4 - 8$ ← add the opposite

$$4 + (-8) \rightarrow 8 - 4 = 4$$

↓ largest value

$$\boxed{-4}$$

8. $-12 - (-2)$ ← add opposite

$$-12 + 2 \rightarrow 12 - 2 = 10$$

↓ largest value

$$\boxed{-10}$$

9. $-\frac{2}{3} + \frac{1}{3}$ ← same denominator, add numerators

$$\frac{-2+1}{3} = \boxed{\frac{-1}{3}}$$

10. $\frac{-5}{13} - (-\frac{2}{13})$ ← same denominator, add numerators

$$\frac{-5}{13} + \frac{2}{13}$$

$$\frac{-5+2}{13} = \boxed{\frac{-3}{13}}$$

11. $\frac{-5}{12} - \frac{1}{6} \rightarrow$ different denominators, find LCD
 6, 12, 18 12, 24, 36

$$\frac{-5}{12} - \frac{2}{12} = -\frac{5}{12} + \left(-\frac{2}{12}\right) = \boxed{\frac{-7}{12}}$$

12. $5 \cdot (-7) \quad (+)(-) = (-)$
 -35

13. $(-9) \cdot (-2) \quad (-)(-) = (+)$
 $+18$

14. divide: $\frac{-12}{4} \cdot \frac{(-)}{(+)} = (-)$
 $\boxed{-3}$
 $4 \overline{)12}$

15. divide: $\frac{-18}{9} \quad \frac{(-)}{(-)} = (+)$
 $9 \overline{)18} \quad \boxed{2}$

16. $\frac{-5}{6} \cdot \frac{-1}{3} = \boxed{\frac{5}{18}}$
 $(-)(-) = (+)$

17. $\frac{-6}{7} \cdot \frac{2}{4} = -\frac{12}{28} \xrightarrow{\text{simplify}} \boxed{\frac{-3}{7}}$
 $(-)(+) = (-)$

18. $\frac{-3}{4} \div \frac{1}{5}$
 Keep, change, flip
 $-\frac{3}{4} \times \frac{5}{1} = -\frac{15}{4}$

19. $\frac{-4}{6} \div \frac{-1}{2}$ KCF
 $-\frac{4}{6} \times \frac{2}{-1} = \frac{8}{6} \xrightarrow{\text{simplify}} \boxed{1\frac{1}{3}}$
 $(-)(-) = (+)$

$\boxed{-3\frac{3}{4}}$
 $4 \overline{)15} \quad -12$
 $\frac{3}{4}$

SECTION C

20. Nate had 25 action figures. He gave away 10 to his brother. He then got 3 new action figures as a gift. Write an expression and determine how many action figures Nate has now.

$$25 - 10 + 3 = 15 + 3 = 18$$

↑ ↑
gave away new

Nate has 18 action figures now.

21. Nate donated $\frac{1}{3}$ of his action figures a month later. How many action figures did he give away?

$$\frac{1}{3} \times \frac{18}{1} = \frac{18}{3}$$

$$3 \overline{)18} \quad -18$$

0

Nate donated 6 action figures.