



STUDENT

WILFRED

GROUP

INSTRUCTOR

DATE

**Math Lab Lesson #7 Activity: Grading an Exam**

Name:

Directions:

- 1) You have **40 minutes** to complete this test. There are 20 questions.
- 2) **No calculators** are allowed.
- 3) Mark your answers carefully on the answer sheet provided separately.
- 4) If you finish early, **check your work**.

1. Which expression is **not equivalent** to  $5 - 7$ ?

A)  $-7 + 5$

**B)  $5 + (-7)$**

C)  $7 + (-5)$

D)  $-1(7 - 5)$

$5 + (-7) = 5 - 7$

SUBTRACTING IS THE SAME AS ADDING A NEGATIVE!

2. Which expression shows the product  $11 \times 12$  using our base-10 system?

A)  $1 \times 10^2 + 3 \times 10^1 + 2 \times 10^0$

B)  $3 \times 10^2 + 2 \times 10^1 + 1 \times 10^0$

**C)  $1 \times 10^3 + 3 \times 10^2 + 2 \times 10^1$**

D)  $11 \times 10^0 + 12 \times 10^0$

$11 \times 12 = 132$

$= \underline{100} + \underline{30} + \underline{2}$



3. Which sentence best describes the relationship between natural numbers and integers?

- A) Some natural numbers are not integers
- B) All natural numbers are integers
- C) All integers are natural numbers

D) Natural numbers and integers are the same thing!

2 WORDS, SAME THING!

4. Which equality shows that the natural numbers are **not closed** under subtraction?

NATURAL → (A)  $5 - 7 = -2$  ← NOT NATURAL

B)  $7 - (-5) = 12$

C)  $7 \times (-5) = -35$

D)  $7 - 5 = 2$

5. You have \$23 in your wallet. You get paid \$9 per hour, and you worked for 3 hours last week and 5 hours this week. Then your friend Yacine borrows \$20. Which expression best represents how much money you have left in your wallet?

A)  $23 + 9(3 - 5) - 20$

B)  $23 + 9(3 + 5) - 20$

C)  $23 - 9(3 + 5) + 20$

D)  $23 + 9(3 + 5 - 20)$

↑  
-20



6. All even numbers can be written in the form  $2A$ , where  $A$  is an integer. All odd numbers can be written in the form  $2B + 1$ , where  $B$  is an integer.

Which expression represents an odd number? (Assume that  $x$  is an integer)

A)  $2x + 2$

B)  $2x + 3$

C)  $2x + 4$

D)  $2(2x + 1)$

$2x+1$  IS AN ODD NUMBER.

7. The statement  $9(a - b) = 9a - b$  is

A) Always true

B) Sometimes true

C) Never true

D) Not enough information given

DISTRIBUTE

$$9a - 9b \stackrel{?}{=} 9a - b$$

NOT TRUE!

8. The statement  $3 - 2x = x$  is

A) Always true

B) Sometimes true

C) Never true

D) Not enough information given

WHEN  $x=1$  IT IS TRUE.

$$\begin{array}{r} 3 - 2x = x \\ + 2x \quad + 2x \\ \hline 3 = 3x \\ \frac{3}{3} = \frac{3x}{3} \\ 1 = x \end{array}$$

Check: ?

$$3 - 2(1) = 1$$

$$3 - 2 = 1$$

$$1 = 1$$



9. The number of inches of water in a bucket during a steady rain shower is given by the expression  $\frac{1}{2}t + \frac{3}{2}$ , where  $t$  is the number of hours since the shower started.

If there are 4 inches of rain in the bucket, how long has it been raining for?

A) 2 hours

$$\frac{1}{2}(4) + \frac{3}{2} = \frac{4}{2} + \frac{3}{2} = \frac{7}{2}$$

B) 8 hours

C) 5 hours

D)  $\frac{7}{2}$  hours

10. In the past year and a half, Gnarly the dog gained an average of  $\frac{1}{8}$  pound each month.

Today, Gnarly weighs 25 pounds.

How much did Gnarly weigh two years ago?

A) 23 pounds

$$= \overset{\uparrow}{24} \text{ MONTHS}$$

B) 22 pounds

$$\text{SO } \frac{1}{8}(24) = 3 \text{ POUNDS}$$

C) 20 pounds

D) 28 pounds

$$\text{SO } 25 + 3 = \boxed{28}$$





11. Amineta is practicing factoring expressions. Her work is shown below. Which factorization is **not correct**?

A)  $5x + 30 = 5(x + 6)$

B)  $30 - 5x = -5(6 - x)$

C)  $5x - 30 = 5(x - 6)$

D)  $30 - 5x = -5(x - 6)$

X IS ON THE RIGHT SIDE

X IS ON THE LEFT SIDE

THE X CHANGED PLACES!

12. Consider the equation  $3(x + 2) = 21y + 6$ . What must be true of the ratio  $\frac{y}{x}$  in order for this equation to be an identity? (Assume that  $x \neq 0$  and  $y \neq 0$ )

A)  $\frac{y}{x} = 7$

B)  $\frac{y}{x} = -\frac{1}{7}$

C)  $\frac{y}{x} = \frac{1}{7}$

D)  $\frac{y}{x} = \frac{x}{y}$

$$\begin{aligned} 3(x+2) &= 21y + 6 \\ 3x + 6 &= 21y + 6 \\ \hline \frac{3x}{3} &= \frac{21y}{3} \\ x &= 7y \end{aligned}$$

13. Let  $P = 5k + 4$  and  $Q = 18 - 2k$ . If  $P = Q$ , then what is the value of  $k$ ?

A)  $k = -4$

B)  $k = 4$

C)  $k = 2$

D)  $k$  can be any rational number.

SINCE  $P=Q$ ,  $k$  CAN BE ANYTHING!



14. A cake recipe used  $\frac{7}{5}$  cups of sugar. The cake is divided into 14 pieces. How much sugar is in each piece?

A)  $\frac{1}{5}$  cup

$$\frac{\frac{7}{5}}{14} = \frac{7}{5} \times \frac{14}{1} = \frac{98}{5}$$

B)  $\frac{1}{10}$  cup

C)  $\frac{98}{5}$  cup

D)  $\frac{7}{19}$  cup

15. Which of the following expressions is **not equivalent** to the others?

A)  $\frac{(5)(2)}{3} = \frac{10}{3}$

B)  $2 \div \frac{5}{3} = 2 \times \left(\frac{3}{5}\right) = \frac{6}{5}$

C)  $\frac{5}{\left(\frac{3}{2}\right)} = 5 \times \left(\frac{2}{3}\right) = \frac{10}{3}$

D)  $2 \left(\frac{5}{3}\right) = \frac{10}{3}$



16. You've already eaten  $\frac{1}{5}$  of a bowl of ice cream. When you leave the room, Gnarly the dog eats  $\frac{3}{4}$  of what was left. After this, what fraction of the original ice cream is left in the bowl?

A)  $\frac{15}{4}$

$$\left(\frac{1}{5}\right)\left(\frac{3}{4}\right) = \frac{3}{20}$$

B)  $\frac{3}{20}$

C)  $\frac{1}{5}$

D) No ice cream is left.

17. Order the three fractions  $\frac{2}{3}$ ,  $\frac{1}{2}$ , and  $\frac{3}{7}$  from least to greatest?

LOOK AT NUMERATORS; ① → ② → ③

$$\frac{\textcircled{1}}{2}, \frac{\textcircled{2}}{3}, \frac{\textcircled{3}}{7}$$

18. A quality control manager at a factory selects 20 lightbulbs at random for inspection out of every 750 lightbulbs produced. At this rate, how many lightbulbs will be inspected if the factory produces 3,000 lightbulbs?

A) 60,000 lightbulbs

B) 15,000 lightbulbs

C) 80 lightbulbs

D) 40 lightbulbs

$$\frac{20}{750} = \frac{3,000}{x}$$

$$x = 112,500$$

?

MISTAKE IN THE QUESTION.



19. If  $-\frac{2}{7}k = \frac{5}{6}$ , what is the value of  $k$ ?

$$-\frac{2}{7}k = \frac{5}{6}$$

$$k = \frac{5}{6} \left( \frac{-2}{7} \right) = \frac{-10}{42} = \boxed{\frac{-5}{21}}$$

20. Sylvestre walks 39 meters in 44.7 seconds. If he walks at this same rate, which of the following is closest to the distance he will walk in 6 minutes? (60 seconds = 1 minute)

A) 200 meters

**B) 320 meters**

C) 240 meters

D) 1,400 meters

$$39 \approx 40 \text{ meters}$$

$$44.7 \approx 45 \text{ seconds.}$$

$$6 \times 60 = 360 \text{ seconds}$$

$$\frac{40 \text{ m}}{45 \text{ s}} = \frac{x \text{ m}}{360 \text{ s}}$$

$\xrightarrow{\times 8}$   
 $\xrightarrow{\times 8}$

$$x = 40 \times 8 = \boxed{320 \text{ m}}$$