Ready® Mathematics

Unit 1 Unit Assessment   **Form A**

Solve the problems.

1 Kesia is practicing her free throws. She made $\frac{5}{8}$ of the shots she took at basketball practice today.

Part A

Use long division to find the decimal equivalent of $\frac{5}{8}$.

Part B

Kesia knows that $\frac{1}{4} = 0.25$. Explain how she could use this fact to determine the decimal equivalent of $\frac{5}{8}$.

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2 Which expression has a negative value?

A $-12 \cdot (-8)$ **C** $-11 \cdot 6$

B $-72 \div (-9)$ **D** $-14 + 24$

3 The temperature of a liquid in an experiment starts at 0°C. The experiment calls for the temperature of the liquid to change at a rate of -0.8°C per minute. How long will it take for the liquid to reach -10.8°C? Estimate to show that your answer is reasonable.

_____

_____

Unit 1 Unit Assessment continued

4 Julian saves $\frac{5}{7}$ of the money he makes babysitting. What is $\frac{5}{7}$ written as a decimal?

A 1.4

B $0.\overline{714285}$

C $0.\overline{7}$

D $\frac{5}{7}$ cannot be written as a decimal.

5 Look at the following equations. Choose *True* or *False* for each equation.

a. $-2.5 + (-3.5) = -6$ ☐ True ☐ False

b. $-5\frac{2}{3} = 1\frac{1}{3} - (-7)$ ☐ True ☐ False

c. $-1\frac{1}{4} + 2 - \frac{3}{4} = -\left(1\frac{1}{4} + \frac{3}{4}\right) + 2$ ☐ True ☐ False

d. $-4 - (-12) = 12 + (-4)$ ☐ True ☐ False

6 Which of the following expressions represents a positive number? Choose all that apply.

A $-2.25 - (-3)$

B $2.3 + (-2.4)$

C $4 - (-2)$

D $-\frac{1}{2} + \left(-\frac{3}{4}\right)$

E $-\frac{7}{8} - \left(-\frac{6}{7}\right)$

7 As water evaporates from a potted plant, its weight changes at a rate of $-1\frac{5}{8}$ ounces per day.

Part A

Estimate the change in the potted plant's weight after one week.
Explain your thinking.

_____

_____

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Part B

Write and solve an equation using exact values to show the change in the plant's weight after one week.

Part C

Explain how your estimate shows your answer is reasonable.

_____

_____

_____

8 In which situation do the quantities combine to make 0?

A   Juan spent $20. The next day, he earned $10 per hour for $2\frac{1}{2}$ hours of babysitting.

B   Erica deposited $75 into her savings account. She withdrew $75 the following week.

C   The predicted high temperature for a winter day is 7°C and the predicted low temperature is −7°C.

D   A deep-sea diver descends 15 meters, pauses, and then descends another 15 meters.

9 The temperature of a solution in a science experiment is −6.2°C. Jesse wants to raise the temperature so that it is positive.
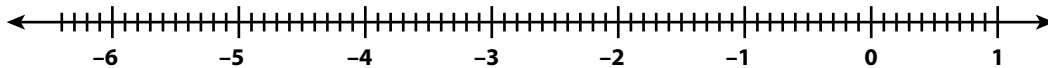
Part A

Give an example of a number of degrees Celsius by which Jesse could raise the temperature.

_____

Part B

Write an equation to represent the situation.

_____

_____

Part C

Draw a number line and use arrows to represent the equation you wrote in Part B.

10 Fill in the blanks to make each equation true.

a. $-6.5 \cdot (-0.4) =$ _____

b. _____ $\cdot \dfrac{9}{5} = -27$

c. $-6 \div (-3) \cdot (-5) =$ _____

d. _____ $\div \left(-\dfrac{2}{3}\right) = \dfrac{3}{10}$

e. _____ $= -4.5 \div 1.8 \cdot 3.2$

Unit 1 Unit Assessment continued   **Form A**

11 Look at the following statements. Choose *True* or *False* for each statement.

   a. $2.\overline{27}$ is a terminating decimal.   ☐ True   ☐ False

   b. 3.14 is a terminating decimal.   ☐ True   ☐ False

   c. The decimal equivalent of $\frac{13}{6}$ is a repeating decimal.   ☐ True   ☐ False

   d. The decimal equivalent of $\frac{9}{4}$ is a repeating decimal.   ☐ True   ☐ False

12 Which situation could the expression $-\frac{16}{4}$ represent?

   A A temperature increases 16°F over 4 minutes. So the temperature increased by 4°F per minute.

   B Each of 4 golfers has the same score after 18 holes. The total of their scores is −16. So each golfer's score is −4.

   C A football team loses 16 yards in one play. They gain 4 yards in the next play. In the two plays combined, the team lost 4 yards.

   D Over 4 weeks, Monique withdraws $16 per week from her bank account. Altogether, she withdraws $64.

13 Consider the expression $6 + (-3.25)$.

   Part A

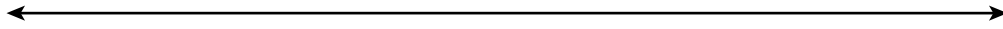   Describe a situation that could be represented by the expression.

   _____

   _____

   Part B

   Find the sum and explain what it means in the context of the situation.

   _____

   _____

14 Add or subtract. Represent each equation with a number line.

a. $-28 - (-16) =$ _____

$$\longleftarrow\hspace{9cm}\longrightarrow$$

b. $45 + (-12) =$ _____

$$\longleftarrow\hspace{9cm}\longrightarrow$$

c. _____ $= 15 - 37$

$$\longleftarrow\hspace{9cm}\longrightarrow$$
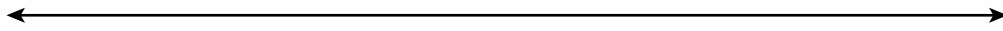
15 Cody claims that when $\frac{1}{6}$ is multiplied by a negative number, the result will always be less than $\frac{1}{6}$. Do you agree with Cody? Explain. Give examples to support your answer.

_____

_____

_____

_____

_____

Name _____ Date _____

Ready® Mathematics

Solve the problems.

1 Gwen borrows $300 from her parents to buy a bike. She agrees to pay them back plus 3% simple interest over one year.

Part A

Write an equation to represent the total amount Gwen will owe her parents.

Part B

What is the total amount of money Gwen will owe her parents?

2 Marie will earn $15 per hour at a new job. During training, she will earn $10 per hour. What percent of Marie's regular hourly rate will she earn during training?

3 Lana will sew 2 blankets for each of her grandchildren.

Part A

Write an equation to represent how many blankets, *b*, Lana will sew for *g* grandchildren.

Part B

Use your equation to determine how many blankets Lana will sew if she has 4 grandchildren.

Show your work.

Lana will sew _____ blankets.

4 A value of 500 increases by 12%.

Part A

Write an equation that could be used to find the new value.

Part B

What is the new value?

5 Which of the following represents the greatest percent error?

A $10 underpayment on a $40 restaurant bill

B Hope to make 35 baskets in a week and actually make 50

C Actual → [   ] [   ] [   ]
     Error → [   ]

D Incorrectly estimate a length of 125 feet to be 150 feet

6 Determine if the equation $\frac{1}{3}x = y$ represents a proportional relationship.

Part A

Write four sets of values that represent $\frac{1}{3}x = y$ in the table below.

x				
y				

Part B

Does the equation represent a proportional relationship? Use your table from Part A to explain your answer.

_____

_____

2

7 Abba grew 1 foot over the past year. He is now 5 feet tall.

Part A

Draw a bar model to compare Abba's previous height to the amount he grew over the past year.

Part B

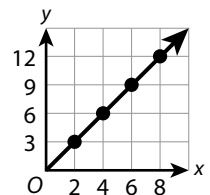Use your model to write and solve a proportion to find the percent increase in Abba's height.

Show your work.

Abba had a _____ increase in height.

8 Use the graph to answer the following questions.

Part A

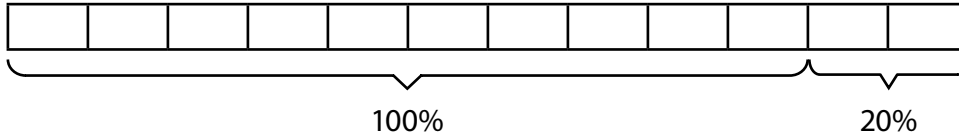What is the constant of proportionality for this relationship?

Part B

Give a possible real-world example of what the constant of proportionality could represent.

9 Which of the following amounts could the whole tape diagram represent? Choose all that apply.

100%   20%

A new salary after a 20% raise

B 20% tip

C new price after a 20% discount

D 20% decrease in attendance

E shampoo in a bottle containing 20% more shampoo

10 Tony rollerbladed 4 miles in 20 minutes. What was his speed in miles per hour?

Show your work.

Tony's speed was _____ miles per hour.

11 Horace's speedometer reads 60 miles per hour, but during a road test he finds that he was actually driving 58 mph. What is the percent error in Horace's speedometer?

Show your work.

The percent error is _____.

4

Unit 2 Unit Assessment continued   **Form A**

12 Wang's pay is $20 per hour. He receives a 5% pay raise.

Part A

Could Wang use any of the following methods to calculate his new hourly pay rate?
Choose *Yes* or *No* for each method.

a.   Multiply 20 by 0.05 and add this result to 20.   ☐ Yes   ☐ No

b.   Add $5 to his original pay.   ☐ Yes   ☐ No

c.   Calculate 5% of 2.   ☐ Yes   ☐ No

d.   Multiply his original pay by 1.05.   ☐ Yes   ☐ No

e.   Solve for *x*: $\frac{x}{20} = \frac{105}{100}$.   ☐ Yes   ☐ No

Part B

What is Wang's new hourly pay rate?

Part C

Carla's pay is $22 per hour. She receives a pay raise of $1 per hour.
Did her pay increase by the same percent amount as Wang's? Explain.

_____

_____

_____

13 Which of the following values could *x* represent in the bar diagram?
Choose all that apply.

$20	15% of $20
total *x*	

A   the sale price of a shirt (15% discount off of $20)

B   the cost of a restaurant bill ($20 plus 15% tip)

C   an amount of profit donated to charity (15% of $20)

D   the value of Kalee's investment ($20 plus 15% interest)

E   the amount of interest Donnie owes his friend Juan (15% interest on $20 borrowed)

14 Find the percent increase or decrease for each of the following values (indicate whether each is an increase or a decrease).

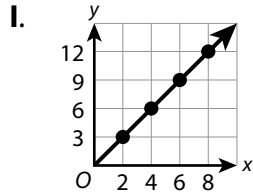**a.** $3x$ to x _____

b. $0.5p$ to $0.75p$ _____
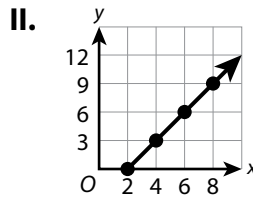
c. $\frac{1}{2}q$ to $\frac{7}{8}q$ _____

d. y to $0.78y$ _____

15 Consider the following relationships.

I.

III.

x	7	$3\frac{1}{2}$	1.75
y	20	10	5

II.

IV. $0.35y = x$

Tell whether the following statements about the relationships are *True* or *False*.

a. The unit rate for III $=$ the unit rate for IV.   ☐ True ☐ False

b. The unit rate for I $>$ the unit rate for III.   ☐ True ☐ False

c. The unit rate for I $=$ the unit rate for IV.   ☐ True ☐ False

d. II does not represent a proportional relationship.   ☐ True ☐ False

e. III does not represent a proportional relationship.   ☐ True ☐ False