Algebra 1   **ANSWER KEY**   ID: 2

Order of Operations & Signed Numbers Review

Will the answer be a negative or positive number? DO NOT SIMPLIFY, just figure out whether it will be positive or negative.

1) $-2(-2)(3+4)(1057)$

 A) cannot be determined
 B) positive *(circled)*
 C) negative
 D) -

2) $(-3 - 10 - 5)(57)$

 A) -
 B) cannot be determined
 C) negative *(circled)*
 D) positive

3) $3 \div (-2/7) \cdot (-20)$

 A) -
 B) positive *(circled)*
 C) negative
 D) cannot be determined

4) multiplying 3 negative numbers times 4 positive numbers will give you a

 A) positive
 B) -
 C) negative *(circled)*
 D) cannot be determined

5) A negative number plus a positive number will give you a _____.

 A) -   B) positive
 C) negative   **D) cannot be determined** *(circled)*

depends on the specific numbers

Evaluate each expression.

6) $2 + -2 \times -5 - 6$

$2 + 10 - 6 = \boxed{6}$

7) $-3 + (-3 - 4) \cdot -6 \qquad = -3 + (-7) \times -6$

$= -3 + 42 = \boxed{39}$

8) $(3 - (4 - 5)) \div -4$

$(3 - (-1)) \div -4$

$4 \div -4 = \boxed{-1}$

9) $5 \div (5 - 6) + 6$

$5 \div (-1) + 6$

$-5 + 6 = \boxed{1}$

10) $(12 - (-2 + 4)) \div -5$

$(12 - (2)) \div -5$

$10 \div -5 = \boxed{-2}$

11) $-18 \div -3 \times 3 - 1$

$(-18 \div -3) \times 3 - 1$

$6 \times 3 - 1$

$18 - 1 = \boxed{17}$

Rational vs Irrational Numbers Unit 1 Review

For each number, is it Rational or Irrational?

1) $\sqrt{45}$

Irrational (I)

2) 32.7878787...

Rational (R) — repeating decimal

3) 100

R

4) $-\sqrt{100}$

R

5) -0.0034567969

R
(finite decimal)

6) $-3\pi + 3\pi$

R (zero!)

7) $-\sqrt{3}$

I

8) Is $100 - \sqrt{45}$ rational or irrational?
Explain your answer.

I

Rational — Irrational = Irrational

($100 - \sqrt{45}$ cannot be reduced to a rational.)

9) Is rational + rational always an irrational?

No, never!

R + R = R

10) A rational + irrational is always a/an

_____.

Irrational

Algebra 1

ANSWER KEY

ID: 4

Fractions Unit 1 Review

Write the reciprocal of each number

1) -3 $\quad -\dfrac{1}{3}$

2) $\dfrac{4}{7}$ $\quad \dfrac{7}{4}$

Simplify each expression.

3) $8 - \dfrac{7}{2} = \dfrac{16}{2} - \dfrac{7}{2} = \boxed{\dfrac{9}{2}}$

4) $-\dfrac{11}{3} - \dfrac{5}{7} = -\dfrac{77}{21} - \dfrac{15}{21} = \boxed{-\dfrac{92}{21}}$ 3)

5) $-\dfrac{7}{6} + \dfrac{9}{5} = -\dfrac{35}{30} + \dfrac{54}{30} = \boxed{\dfrac{19}{30}}$

6) $-\dfrac{7}{6} + \dfrac{11}{4} = -\dfrac{28}{24} + \dfrac{66}{24} = \dfrac{38}{24} = \boxed{\dfrac{19}{12}}$

(or, make common denominato
12)

7) $\dfrac{18}{7} + -\dfrac{4}{7} = \dfrac{14}{7} = \boxed{2}$

8) $-1 + \dfrac{17}{6} = -\dfrac{6}{6} + \dfrac{17}{6} = \boxed{\dfrac{11}{6}}$

Find each product.

9) $\dfrac{18}{5} \cdot -\dfrac{1}{2} = -\dfrac{18}{10} = \boxed{-\dfrac{9}{5}}$

10) $-\dfrac{7}{4} \cdot \dfrac{5}{7} = -\dfrac{35}{38} = \boxed{-\dfrac{5}{4}}$

11) $-\dfrac{1}{6} \cdot -\dfrac{9}{5} = $ ~~$\dfrac{5}{30}$~~ ~~$\dfrac{9}{30}$~~

$= \dfrac{9}{30} = \boxed{\dfrac{3}{10}}$

Find each quotient.

12) $5 \div \dfrac{2}{3} = \dfrac{15}{3} \cdot \dfrac{3}{2} = \boxed{\dfrac{15}{2}}$

13) $-\dfrac{9}{8} \div 2 = -\dfrac{9}{8} \cdot \dfrac{1}{2} = \boxed{-\dfrac{9}{16}}$

14) $-\dfrac{7}{4} \div -\dfrac{14}{4} = -\dfrac{7}{4} \cdot -\dfrac{4}{14} = \dfrac{7}{14} = \boxed{\dfrac{1}{2}}$

Algebra 1

Name _Solution Guide_

Unit 1 Review: Percents

Date_____

Solve each problem.

1) Round to the nearest hundredth.
   345.297948123

345.30
(round up to the next
tenths place and add
0)

2) Write 26% as a decimal.

0.26
(move decimal
2 places to the left)

3) Write 3/50 as a percent.

$\frac{3}{50} = .06 = 6\%$

or

$\frac{3}{50} = \frac{6}{100} = 6\%$

4) 23% of 150.3 is what?

$\frac{23}{100} = \frac{x}{150.3}$ OR $\quad .23 = \frac{x}{150.3}$ (150.3)

$23(150.3) = 100x$

$\frac{3456.9}{100} = \frac{100x}{100}$

$\boxed{x = 34.6}$

$\boxed{x = 34.6}$

5) What percent of 156 is 64.9?

$\frac{x}{100} = \frac{64.9}{156}$ OR $x = \frac{64.9}{156}$

$156x = 64.9(100)$ $x = .416$

$\frac{156x}{156} = \frac{6490}{156}$

$\boxed{x = 41.6\%}$ $\boxed{= 41.6\%}$

Find the final cost.

6) 160.5 is 75% of what?

$\frac{75}{100} = \frac{160.5}{x}$ OR $(x).75 = \frac{160.5}{x}(x)$

$75x = 100(160.5)$ $0.75x = 160.5$

$75x = 16050$ $\frac{0.75}{0.75} = \frac{160.5}{.75}$

$\boxed{x = 214}$ $\boxed{x = 214}$

7) Family dinner: $42
   Tip: 16%

$42(.16) = 6.72$

$42 + 6.72 = \boxed{\$48.72}$

8) Tickets to see Beyonce: $128
   Ticketing fee: 7%

$128(0.07) = 8.96$

$128 + 8.96 = \boxed{\$136.96}$

9) New outfit: $107
   Back to school discount: 25%
   Sales Tax: 8%

$107(.25) = 26.75$

$107 - 26.75 = 80.25$

$80.25(0.08) = 6.42$

$80.25 + 6.42 = \boxed{86.67}$

10) Regents Prep Book: $35.87
    Discount for buying online: 12%
    Shipping fee: 4%

$35.87(.12) = 4.30$

$35.84 - 4.30 = 31.57$

$31.57(.04) = 1.26$

$31.57 + 1.26 = \boxed{\$32.83}$

Name: **Solution Guide** Rates & Unit Rates Unit 1 Review

Round to the nearest tenth or the nearest cent if necessary.

1. Find the missing piece. Distance = 320 km, Rate = 50 kilometers per hour, Time = ?

$$d = rt$$
$$320 \text{ km} = (50 \text{ km}/h)t$$
$$t = \frac{320 \text{ km}}{50 \text{ km}/h} = \boxed{6.4 \text{ h}}$$

2. A plane flies at 546 mph for 5 hours. How far does the plane travel?

$$d = rt$$
$$d = 546(5) = \boxed{2,730 \text{ miles}}$$

3. Julio is driving at 65 miles per hour. How many miles has he driven after 2.5 hours?

$$d = rt$$
$$= 65(2.5) = \boxed{162.5 \text{ miles}}$$

4. How long does it take a cruise ship to travel 112 miles at the speed of 24 mph?

$$d = rt$$
$$\frac{112}{24} = \frac{24t}{24}$$
$$\boxed{t = 4.7 \text{ hours}}$$

5. A 6-pack of Coke costs $2.53. How much does each can cost?

$$\frac{\$2.53}{6} = \boxed{\$0.42 \text{ per can}}$$

6. Four gallons of gas costs $16.80. What is the price per gallon?

$$\frac{\$16.80}{4} = \boxed{\$4.20 \text{ per gallon}}$$

1. Without finding the answer, will the answer be positive or negative?

   $-4(8)(-6)(-5)(6) \div 21(3)$

   negative

2. Joseph took a trip to Lafayette to visit his brother at college. On the way to Lafayette, the bus drove 55 km/h. On the way home, the bus went 22 km/h. How long did the trip to Lafayette take if the trip back took five hours?

   Trip a: d = rt
   = 22(5)
   = 110 km

   Trip 1: d = rt
   $\frac{110}{55} = \frac{55t}{55}$
   t = 2

   The trip to Lafayette took 2 hours

3. Jared wants to buy FIFA 15 from Amazon. The game is listed at $67.99, but Jared gets an 8% discount because he has Amazon Prime. Jared wants the game delivered overnight, which is an additional $7.00 shipping charge. Amazon charges 6% tax on the total purchase. What is the final cost of the game?

   67.99(.08) = 5.44
   67.99 - 5.44 = 62.55
   62.55 + 7 = 69.55

   69.55(.06) = 4.17
   69.55 + 4.17 = $73.72

4. Target sells 6 white t-shirts for $25.50, Wal-Mart sells 4 white t-shirts for $18.00, and Costco sells 5 white t-shirts for $21.00. Which store has the best deal on white tees?

   T: $\frac{25.50}{6}$ = $4.25/shirt

   C: $\frac{21.00}{5}$ = $4.20/shirt

   W: $\frac{18}{4}$ = $4.50/shirt

   Costco

5. The iSchool needs to know the heights of all of the graduating seniors in order to size their gowns for graduation. Ms. Leimsider knows that Adam is 75" tall. Zena is 11" shorter than Adam. Marley is 6" taller than Zena. Karen is 44" taller than ¼ of Zena's height. Sam is 39" taller than 1/3 of Karen's height. List the height of each student from tallest to shortest.

   A = 75"
   Z = 75 - 11 = 64"
   M = 64 + 6 = 70"
   K = 64(¼) + 44 = 60"
   S = 60(⅓) + 39 = 59"

   Adam, Marley, Zena, Karen, Sam

6. Vivianne has a $100 gift card to Forever 21. She wants to buy a shirt for $24.65, a pair of pants for $17.50, a sweater for $37.82, and a necklace for $7.24. She also knows that she has to pay a 10% sales tax on her total purchase. Does she have enough money on her gift card to purchase all of the items?

   Via estimation:
   $25 + $18 + $38 + $7
   = $88(.1) = $9
   88 + 9 = $97
   yes

   OR Via calculation:
   $24.65 + 17.50 + 37.82 + 7.24 =
   $87.21(.10) = 8.72
   87.21 + 8.72 = $95.93
   yes