Unit 1 Accelerated
Take Home and Check

Name _____

1) Tell the absolute value of:

    a) $|-5|$

    b) $|56|$

    c) $|0|$

    d) $|-1|$

1)

    a) 5

    b) 56

    c) 0

    d) 1

2) Tell the opposite of:

    a) 9

    b) -6

    c) -15

    d) 0

2)

    a) -9

    b) 6

    c) 15

    d) 0

3) Perform the indicated operation:

    a) $-6 + 12 =$

    b) $18 + (-4) =$

    c) $-23 + 15 =$

3)

    a) 6

    b) 14

    c) -8

①

d) $-12 + (-17) =$

e) $-14 + 26 + (-18) =$

f) $25 + (-13) + (-17) + 34 =$

g) $-16 - (-8)$

h) $-42 - 9 =$

i) $(3)(-18) =$

j) $\frac{-54}{3} =$

k) $-24 - 36 =$

l) $46 - (-8)$

m) $\frac{-16}{4} =$

n) $-5(-20) =$

o) $(-3)(-2)(5)(-8)(1) =$

show work!

p) $|-6 + 3| + (-5) =$

q) $|-3| - |-2| =$

r) $|(-2)(4)| + |(3)(-5)| =$

d) -29

e) -6

f) 29

g) -8

h) -51

i) -54

j) -18

k) -60

l) 54

m) -4

n) 100

o) -240

p) $|-6+3| + (-5)$
$|-3| + (-5)$
$3 + -5 = \boxed{-2}$

q) $|-3| - |-2|$
$3 - 2 = \boxed{1}$

r) $|(-2)(4)| + |(3)(-5)|$
$|-8| + |-15|$
$8 + 15 = \boxed{23}$

②

4) Complete the statement using <, > or =

a) -3 _____ $|-3|$

b) $|-16|$ _____ 16

c) -2 _____ -8

d) -16 _____ 13

e) -5 _____ -4

4)

a) -3 ___ $|-3|$
   $-3 < 3$

b) $|-16|$ ___ 16
   $16 = 16$

c) $-2 \geq -8$

d) $<$

e) $<$

5) Write an addition sentence for each situation. Then find the sum:

a) You withdraw $40 from your savings account. Then you withdraw $23.95 more.

b) In Saturday's football game, the Jackson Terriers lost 3 yards on one play. They gained five yards on the next play.

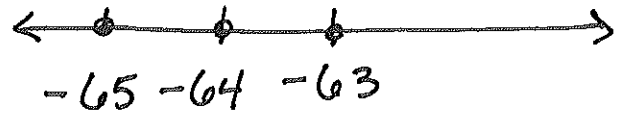c) The temperature was 16°F. The wind chill made it seem 25° colder.

5)

a) $-40 + (-23.95) =$ $\boxed{\$ -63.95}$

b) $-3 + 5 = \boxed{2 \text{ yds}}$

c) $16 + (-25) = \boxed{-9°}$

③

6) Plot the following integers on a number line: -63, -64, -65.

6)

$-65 \quad -64 \quad -63$

7) Put the following integers in order from least to greatest:

$-2, 5, -9, 4, 0, -18, -8$

7)

$-18, -9, -8, -2, 0, 4, 5$

8) Put the following numbers in order from least to greatest:

$$\frac{4}{5}, -.2, .875, -\frac{1}{4}, -\frac{3}{8}, 3$$

8)

$\frac{4}{5}, -.2, .875, -\frac{1}{4}, -\frac{3}{8}, 3$

$\downarrow \quad \downarrow \quad \downarrow \quad \downarrow \quad \downarrow$

$.8, -.2, .875, -.25, -.375, 3$

$-\frac{3}{8}, -\frac{1}{4}, -.2, \frac{4}{5}, .875, 3$

9) Place an addition or subtraction symbol in each space so that the expression on the left equals the expression on the right.

a) 3 ___ (-3) = 5 ___ 1

b) -7 ___ 3 = -2 ___ -2

c) -15 ___ (-2) = 20 ___ (-37)

9)

a) $3 \ominus (-3) = 5 \oplus 1$

b) $-7 \oplus 3 = -2 \oplus (-2)$

c) $-15 \oplus -2 = 20 \oplus (-37)$

④

d) -9 ___(-3)___(-10)= 12 ___(-8)

e) -3 ___ 8 ___(-4)= 7 ___ 1 ___ 3

d) $-9 \ominus (-3) \ominus -10 = 12 \oplus -8$

e) $-3 \oplus 8 \ominus (-4) = 7 \ominus 1 \oplus 3$

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10) Write two different pairs of integers, x and y, that make the statement x – y = -1 true.

1) _____

2) _____

10)

sample answers:

1) 6, 7

2) 9, 10

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11) Your sports drink bottle is $\frac{5}{6}$ full. After practice the bottle is $\frac{3}{8}$ full. Write the difference of the amounts after practice and before practice.

11)

$$\frac{3}{8} - \frac{5}{6}$$

$$\frac{9}{24} - \frac{20}{24} = \boxed{\frac{-11}{24}}$$

12) Answer the questions.

   a) What can you tell about two integers when their quotient is positive?

   b) What can you tell about two integers when their quotient is negative?

   c) What can you tell about two integers when their quotient is zero?

12)

a) The 2 integers must have the same sign.

b) The 2 integers must have diff signs.

c) The numerator (dividend) must be 0 and the denominator (divisor) can be any quantity.

13) The total height of the Statue of Liberty and its pedestal is 305 feet. This is 153 feet more than the height of the statue. What is the height of the statue?

13)
$$305 = height + 153$$
$$305 - 153 = height$$
$$height = \boxed{152 \ ft}$$

14) List all of the categories to which each number below belongs: Natural (N), Whole (W), Integer (I), Rational (R), Irrational (IR).

   a) .98989898...

   b) -256

   c) $\frac{4}{5}$

   d) -2.5

   e) 0

14)

a) R

b) I, R

c) R

d) R

e) W, I, R

f) 2.6767767776…

g) 16

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f) $\mathbb{IR}$

g) N, W, I, R

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15) Solve:

a) $[45 \div (5 + 10) \cdot 2] - [(9 + 6) \div 3]$

15)

a) $[45 \div (5+10) \cdot 2] - [(9+6) \div 3]$
$(45 \div 15 \cdot 2) - (15 \div 3)$
$(3 \cdot 2) - (5)$
$6 - 5 = \boxed{1}$

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b) $-7(26 + 16) \div 10 - 8 \cdot 2^3 - [(12 + 4) \div 16] \cdot 0$

b)

$-7(26+16) \div 10 - 8 \cdot 2^3 - [(12+4) \div 16] \cdot 0$

$-7(42) \div 10 - 8 \cdot 8 - [16 \div 16] \cdot 0$

$-7(42) \div 10 - 8 \cdot 8 - 1 \cdot 0$

$-294 \div 10 - 8 \cdot 8 - 1 \cdot 0$

$-29.4 - 8 \cdot 8 - 1 \cdot 0$

$-29.4 - 64 - 1 \cdot 0$

$-29.4 - 64 - 0$

$-93.4 - 0$

$\boxed{-93.4}$

⑦

16) Simplify:

don't forget to show work

a) $(-4)^4$

b) -4^4

c) $(-1)^{101}$

d) 5^0

e) $-(-4)^4$

16)

a) $(-4)(-4)(-4)(-4)$
   $\boxed{256}$

b) $(-1)(4)(4)(4)(4)$
   $\boxed{-256}$

c) $\boxed{-1}$ because 101 is odd

d) $\boxed{1}$

e) $(-1)(-4)(-4)(-4)(-4)$
   $\boxed{-256}$

17) Evaluate

a) $-4x^2$ if x = 2

b) $16x^3$ if $x = -\frac{1}{4}$

c) $\frac{6r^2}{7st}$ if r = 4, s = -8, t = 3

17)

a) $(-4)(2)(2)$
   $\boxed{-16}$

b) $(16)\left(-\frac{1}{4}\right)\left(-\frac{1}{4}\right)\left(-\frac{1}{4}\right)$

   $(16)\left(-\frac{1}{64}\right)$

   $\frac{^1\cancel{16}}{1} \times \frac{-1}{\cancel{64}_4} = \boxed{-\frac{1}{4}}$

c) $\frac{6(4)(4)}{7(-8)(3)} = -\frac{96}{168} = \boxed{-\frac{4}{7}}$

⑧

18) Solve:

a) $-\sqrt{169} + \sqrt{25}$

b) $\sqrt{225} - \sqrt{36}$

c) $|-\sqrt{25}| + (-26)$

18)

a) $-13 + 5 = \boxed{-8}$

b) $15 - 6 = \boxed{9}$

c) $|-5| + -26$

$5 + -26 = \boxed{-21}$

19) If you shout into the Grand Canyon, your voice travels at the speed of sound (340 m/s) to the bottom of the canyon and back, and you hear an echo. How deep is the Grand Canyon at a spot where you can hear your echo 5.2 seconds after you shout?

$D = RT$

$D = (340)(5.2)$

$D = \boxed{1768 \, m.}$