Name _____ Date _____
Math 8A Period _____

Review For Number System Test

1) Which equation illustrates the distributive property for real numbers?

(a) $-3(5+7) = (-3)(5) + (-3)(7)$

(b) $\sqrt{3} + 0 = \sqrt{3}$

(c) $(1.3 \times 0.07) \times 0.63 = 1.3 \times (0.07 \times 0.63)$

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

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2) Which number below is irrational?

$\sqrt{\frac{4}{9}}$, $\sqrt{20}$, $\sqrt{121}$

Why is the number you chose an irrational number?

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3) $3 \bullet \frac{1}{3} = 1$ is an example of which property?

(a) Multiplication Property of Equality
(b) Distributive Property
(c) Property of Multiplicative Inverse
(d) Identity Property for Multiplication

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4) Which equation is an illustration of the additive identity property?

(a) $x + 0 = x$ (b) $x - 1 = 0$ (c) $x \bullet 1 = x$ (d) $x \bullet \frac{1}{x} = 1$

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5) Which number is rational?

(a) $\frac{5}{4}$ (b) $\sqrt{7}$ (c) $\sqrt{\frac{3}{2}}$ (d) π

---

6) The formula $C = \frac{5}{9}(F - 32)$ can be used to find the Celsius temperature (C) for a given Fahrenheit temperature (F). What Celsius temperature is equal to a Fahrenheit temperature of 77°?

(a) 8° (b) 25° (c) 45° (d) 171°

7) What is the multiplicative inverse of $-\frac{3}{7}$?

(a) $\frac{3}{7}$ (b) $\frac{7}{3}$ (c) $-\frac{7}{3}$ (d) $-\frac{3}{7}$

---

8) $x + (y + 3) = x + (3 + y)$ is an example of which property?

(a) associative property of addition
(b) distributive property
(c) additive identity
(d) commutative property of addition

---

9) $(5y) \cdot (1) = 5y$ is an example of which property?

(a) multiplicative identity property
(b) multiplicative inverse property
(c) commutative property of multiplication
(d) associative property of multiplication

---

10) What is the identity element for addition?

(a) 0 (b) 1 (c) -1 (d) There is no identity element for addition.

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11) Simplify [-5-(-22)].

(a) -27 (b) -17 (c) 17 (d) 27

---

12) Simplify: $\frac{(5\times10^{9})(8\times10^{-2})}{2\times10^{3}}$

(a) 2×10^{5} b) 2×10^{3} c) 2×10^{6} d) 2×10^{9}

---

13) If $a < b$, $c < d$, and a, b, c, and d are all greater than 0, which expression is always true?

(a) $a - c + b - d = 0$ (b) $a + c > b + d$ (c) $\frac{a}{d} > \frac{b}{c}$ (d) $ac < bd$

14) What is the value of : $3+|x-2|$ for x = -3

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15) Rewrite the given expression in standard notation: 2.3×10^{-5}

(a) 230,000 (b) 0.000023 (c) 0.0000023 (d) 2,300,000

---

16) Which one of the following sets has the property of closure under mulitplication?

(a) {1,2,3,6} (b) {-1, 0, 1} (c) {0,2,4} (d) $\left\{\frac{1}{2},0,\frac{1}{2}\right\}$

---

17) Which expression is rational?

(a) π (b) $\sqrt{\frac{1}{2}}$ (c) $\sqrt{3}$ (d) $\sqrt{\frac{1}{4}}$

---

18) Seth is thinking of a number between 20 and 30. The number is prime and not more than 2 away from a perfect square. What is the number?

---

19) Which is an irrational number?

(a) 0 (b) π (c) $-\frac{1}{3}$ (d) $\sqrt{9}$

---

20) What is the numerical value of the expression : $|-2|+|-12|$?

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21) $3 + (5 + 7) = 3 + (7 + 5)$ is an example of which property?

(a) Property of Additive Inverse?
(b) Distributive Property
(c) Commutative Property of Addition
(d) Associative Property of Addition

22) Evaluate the given expression: $6(4 + 1)^2 + (8 - 5)^3$

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23) Find the value of $\frac{3a+7}{5b^2}$ when a = -4 and b = -2

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24) If a = 2 and b = -1, the expression $3ab^2$ is equal to?

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25) Evaluate m - n(m + n), when m = -8 and n = -2.
(a) -20 (b) 60 (c) -28 (d) 12

---

26) The expression 15 - 3[2 + 6(-3)] simplifies to

(a) -45 (b) -33 (c) 63 (d) 192

---

27) In which list are the numbers in order from least to greatest?

(a) 3.2, π, $3\frac{1}{3}$, $\sqrt{3}$ (b) $\sqrt{3}$, 3.2, π, $3\frac{1}{3}$

(c) $\sqrt{3}$, π, 3.2, $3\frac{1}{3}$ (d) 3.2, $3\frac{1}{3}$, $\sqrt{3}$, π

28) Which equation illustrates the multiplicative identity element?

(a) $x + 0 = x$ (b) $x - x = 0$ (c) $x \bullet \frac{1}{x} = 1$ (d) $x \bullet 1 = x$

---

29) Solve $-|12| \times |-6|$

(a) -84 (b) 84 (c) -72 (d) 72

---

30) Given the following algebraic expression, fill in the blanks with the appropriate property that was used to simplify the expression.

$4(x + 6) - 4(x - 2)$

$4x + 24 - 4x + 8$ _____

$4x - 4x + 24 + 8$ _____

$0 + 24 + 8$ _____

32

Name Key
Math 8A

Date _____
Period _____

Review For Number System Test

1) Which equation illustrates the distributive property for real numbers?

(a) $-3(5+7) = (-3)(5) + (-3)(7)$

(c) $(1.3 \times 0.07) \times 0.63 = 1.3 \times (0.07 \times 0.63)$ Associative Prop. of mult

(b) $\sqrt{3} + 0 = \sqrt{3}$ Add. Identity

(d) $\frac{1}{3} + \frac{1}{2} = \frac{1}{2} + \frac{1}{3}$ Comm. Prop. of +

---

2) Which number below is irrational?

$\sqrt{\frac{4}{9}}$, $\sqrt{20}$, $\sqrt{121}$

Why is the number you chose an irrational number? B/C the $\sqrt{20}$ is a non-terminating and non-repeating decimal and it can't be written as the ratio of two integers where the denominator is not zero

---

3) $3 \bullet \frac{1}{3} = 1$ is an example of which property?

(a) Multiplication Property of Equality
(b) Distributive Property
(c) Property of Multiplicative Inverse
(d) Identity Property for Multiplication

* Inverses produce Identities

---

4) Which equation is an illustration of the additive identity property?

(a) $x + 0 = x$ (b) $x - 1 = 0$ (c) $x \bullet 1 = x$ (d) $x \bullet \frac{1}{x} = 1$

* Identities bring you back to the original

---

5) Which number is rational?

(a) $\frac{5}{4}$ (b) $\sqrt{7}$ (c) $\sqrt{\frac{3}{2}}$ (d) π

B/C $\frac{5}{4}$ can be written as the ratio of 2 integers where the Denominator is not 0.

---

6) The formula $C = \frac{5}{9}(F - 32)$ can be used to find the Celsius temperature (C) for a given Fahrenheit temperature (F). What Celsius temperature is equal to a Fahrenheit temperature of 77°?

(a) 8° (b) 25° (c) 45° (d) 171°

$C = \frac{5}{9}(F-32)$ ← make sure to re-write the original

$C = \frac{5}{9}(77-32)$

$C = \frac{5}{9}(45)$

$C = 25$

7) What is the multiplicative inverse of $-\frac{3}{7}$? aka reciprocal keep sign flip the fraction $-\frac{7}{3}$

(a) $\frac{3}{7}$ (b) $\frac{7}{3}$ (c) $-\frac{7}{3}$ (d) $-\frac{3}{7}$

---

8) $x + (y + 3) = x + (3 + y)$ is an example of which property?

(a) associative property of addition
(b) distributive property
(c) additive identity
(d) commutative property of addition

Commutative change order

---

9) $(5y) \cdot (1) = 5y$ is an example of which property?

(a) multiplicative identity property
(b) multiplicative inverse property
(c) commutative property of multiplication
(d) associative property of multiplication

* Identity brings you back to the original

---

10) What is the identity element for addition?

(a) 0 (b) 1 (c) -1 (d) There is no identity element for addition.

$5 + 0 = 5$

---

11) Simplify $[-5-(-22)]$. $= 17$

Brackets are like parentheses

(a) -27 (b) -17 (c) 17 (d) 27

$[-5-(-22)]$
$[-5+22]$

$(-5-(-22))$ how to put in the calc!
$-5+22$

---

12) Simplify: $\frac{(5\times10^{9})(8\times10^{-2})}{(2\times10^{3})}$ → Need extra set of ().

SCI mode: MODE → SCI enter (Clear or 2nd)
* Can also do in alpha y= with no () needed

(a) 2×10^{5} b) 2×10^{3} c) 2×10^{6} d) 2×10^{9}

---

13) If $a < b$, $c < d$, and a, b, c, and d are all greater than 0, which expression is always true?

1 2 3 4

(a) ~~$a - c + b - d = 0$~~
$1 - 3 + 2 - 4 = 0$
$-2 + 2 - 4 = 0$
$0 - 4 = 0$
$-4 \neq 0$

(b) $a + c > b + d$
$1 + 3 > 2 + 4$
$4 \not> 6$

(c) ~~$\frac{a}{d} > \frac{b}{c}$~~
$\frac{1}{4} > \frac{2}{3}$
$.25 \not> .6$

(d) $ac < bd$
$1 \cdot 3 < 2 \cdot 4$
$3 < 8$

14) What is the value of : $3+|x-2|$ for $x=-3$ (absolute value)

$3+|-3-2|$ ← re-write the original

$3+|-5|$

$3+5=8$

Calc: MATH → NUM [1]

A review of operations

15) Rewrite the given expression in standard notation: 2.3×10^{-5} move left!

(a) 230,000 (b) 0.000023 (c) 0.0000023 (d) 2,300,000

0.000023

16) Which one of the following sets has the property of closure under mulitplication?

answers are still in the set

(a) {1,2,3,6}
$1\cdot2=2$ ✓
$6\cdot6=36$ ✗

(b) {-1, 0, 1}
$1\cdot0=0$ ✓
$-1\cdot1=-1$ ✓
$0\cdot1=0$ ✓

(c) {0,2,4}
$-1\cdot-1=1$ ✗
$0\cdot0=0$ ✓
$1\cdot1=1$ ✗

(d) $\left\{\frac{1}{2},0,\frac{1}{2}\right\}$

17) Which expression is rational?

(a) π (b) $\sqrt{\frac{1}{2}}$ (c) $\sqrt{3}$ (d) $\sqrt{\frac{1}{4}}=\frac{1}{2}$

B/c $\frac{1}{4}$ can be written as the ratio of two integers where the denominator is not zero

18) Seth is thinking of a number between 20 and 30. The number is prime and not more than 2 away from a perfect square. What is the number?

23 ~~24~~ 25 26 ~~27~~

P.S.

23

only 1 set of factor 1 + itself

19) Which is an irrational number?

(a) 0 (b) π (c) $-\frac{1}{3}$ (d) $\sqrt{9}$

B/c π is a NON-terminating and NON-repeating decimal

20) What is the numerical value of the expression : $|-2|+|-12|$?

$2+12$

14

21) $3+(5+7)=3+(7+5)$ is an example of which property?

(a) Property of Additive Inverse?
(b) Distributive Property
(c) Commutative Property of Addition
(d) Associative Property of Addition

Commutative

has to do with grouping

Order of operations

22) Evaluate the given expression: $6(4+1)^2+(8-5)^3$

$6(5)^2+(3)^3$

$6\cdot 25+27$

$150+27$

177

---

23) Find the value of $\frac{3a+7}{5b^2}$ when a = -4 and b = -2

$\frac{3a+7}{5b^2}$ $\frac{3(-4)+7}{5(-2)^2}$ $\frac{3(-4)+7}{5(4)}$ $\frac{-12+7}{20}$ $\frac{-5}{20}=-\frac{1}{4}$

---

24) If a = 2 and b = -1, the expression $3ab^2$ is equal to?

$3(2)(-1)^2$

$3(2)(1)$

6

* make sure to use ( ) when substituting

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25) Evaluate m - n(m + n), when m = -8 and n = -2.

(a) -20 (b) 60 (c) -28 (d) 12

$m-n(m+n)$

$-8-(-2)(-8+-2)$

$-8-(-2)(-10)$

$-8-20$

-28

---

26) The expression 15 - 3[2 + 6(-3)] simplifies to

(a) -45 (b) -33 (c) 63 (d) 192

$15-3[2+6(-3)]$

$15-3[2-18]$

$15-3[-16]$

$15+48$

---

27) In which list are the numbers in order from least to greatest?

(a) 3.2, π, $3\frac{1}{3}$, $\sqrt{3}$

(b) $\sqrt{3}$, 3.2, π, $3\frac{1}{3}$

(c) $\sqrt{3}$, π, 3.2, $3\frac{1}{3}$

(d) 3.2, $3\frac{1}{3}$, $\sqrt{3}$, π

(3) $3.2=3.2$

(2) $\pi\approx 3.14159\ldots$

(4) $3\frac{1}{3}\approx 3.3\overline{3}$

(1) $\sqrt{3}\approx 1.73205\ldots$

28) Which equation illustrates the multiplicative identity element?

(a) $x + 0 = x$ (b) $x - x = 0$ (c) $x \bullet \frac{1}{x} = 1$ (d) $x \bullet 1 = x$

★ Identity brings you back to the original!

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29) Solve $-|12| \times |-6|$

(a) -84 (b) 84 (c) -72 (d) 72

$-|12| \cdot |-6|$
$-12 \cdot 6$
-72

---

30) Given the following algebraic expression, fill in the blanks with the appropriate property that was used to simplify the expression.

$4(x + 6) - 4(x - 2)$

$4x + 24 - 4x + 8$ Distributive Property

$(4x - 4x) + 24 + 8$ Commutative Property of Addition

$0 + 24 + 8$ Additive Inverse Property

32

4 + -4 are inverses of one another!

★ Inverses produce identities

opposite = inverses