Algebra 1 EOC study Guide Unit 1 Name _____

1) Which expression results in a rational number?
Given: $L = \sqrt{2}$ $M = 3\sqrt{3}$ $N = \sqrt{16}$ $P = \sqrt{9}$

a) L + M
b) M + N
c) N + P
d) P + L

2) Find the difference between the polynomials:
$(-5x^2 + x - 5) + (3x^2 + 8x + 3)$ $-2x^2 + 9x - 2$

a) $-2x^2 + 9x + 5$
b) $-2x^2 + 9x - 2$
c) $-2x^2 + 9x - 8$
d) $-2x^2 - 7x - 2$

3) Find the product to the following expression:
$(x - 15)(x - 3)$. $x^2 - 18x + 45$

a) $x^2 - 18x - 18$
b) $x^2 - 18x - 45$
c) $x^2 - 18x + 45$
d) $x^2 - 12x + 45$

4) Which answer choice is equivalent to the expression $(x + 6)^2$? $(x+6)(x+6)$ $x^2 + 12x + 36$

a) $x^2 + 12x + 12$
b) $x^2 + 12x + 36$
c) $x^2 + 6x + 36$
d) $x^2 + 36$

5) Charles runs at a rate of 12 kilometers per hour. What is Charles' speed in meters per minute?
12km = 12000 m

a) 12 meters per minute
b) 20 meters per minute
c) 120 meters per minute
d) 200 meters per minute

$\frac{12000}{60} = 200$

6) How many terms would be in the *simplified* expression $22x^3 + 14x^2 + 3x + 7 - 10x^2$?
$22x^3 + 4x^2 + 3x + 7$

a) 5
b) 4
c) 3
d) 2

7) Convert 3 weeks to hours. wks → days → hr
3 x 7 x 24

a) 10.3 hours
b) 55 hours
c) 504 hours
d) 875 hours

8) Which statement is TRUE about the value of the expression $4(\sqrt{8} + 4)$?
R I

a) It is irrational because the product of an irrational number and a rational number is irrational.
b) It is rational because the product of two rational numbers is rational.
c) It is rational because the product of a rational number and an irrational number is rational.
d) It is irrational because the product of two irrational numbers is irrational.

9) Which mathematical term describes both the number 5 and the sum $(2 + x)$ in the expression $5(2 + x)$?

a) Coefficient
b) Constant
c) Factor
d) Variable

10) Andrew purchased some drinks and some chips. Each bag of chips cost $2.00 and each drink cost $2.50. The expression above gives the total amount of money spent by Andrew on chips and drinks. What is the meaning of the term $2.5y$?

$$2x + 2.5y$$

a) The number of drinks purchased by Andrew
b) The number of chips purchased by Andrew
c) The cost of one drink
d) The total amount spent on drinks by Andrew

11) A bird chirps 10 times a minute. Determine how many times the bird would chirp in a day. min → hr
10 x 60 x 24

a) 144 times per day
b) 1,440 times per day
c) 14,400 times per day
d) 144,000 times per day

12) After simplifying the expression, how many terms are there and what is the leading coefficient?
$9n + 7m^2 - 2m + 8 + 4m$
$7m^2 + 2m + 9n + 8$

a) Terms: 2, leading coefficient: 7
b) Terms: 4, leading coefficient: 7
c) Terms: 2, leading coefficient: 9
d) Terms: 4, leading coefficient: 9

13) The average time it takes Greg to mow a lawn can be defined by the expression $28x + 5$ where x is the number of lawns. In this scenario, what does the number 28 represent?

a) The number of lawns Greg mows
b) The average time it takes to mow one lawn
c) The average price Greg charges per lawn
d) The average time it takes to mow multiple lawns

14) What are the term(s), coefficient(s), and constant(s) described by the phrase, "the cost of 6 pizzas, c being the cost of each pizza, and a delivery charge of $5?" $6c+5$

a) Term: 6c, coefficient: 6, constant: 5
b) Term: 6c and 5, coefficient: 6, constant: 5
c) Term: 6c and 5, coefficient: 5, constant: 6
d) Term: 11c, coefficient: 11, constant: none

15) The number of tennis shoes produced by a factory is given by the expression above where the variable x represents the number of hours that the factory has been open. What is the meaning of the coefficient in the expression $115x + 350$?

a) The factory started the day with 115 shoes.
b) The factory produces 115 shoes every hour.
c) The factory produces 350 shoes every hour.
d) The factory started the day with 350 shoes.

16) Simplify the radical $-8\sqrt{726}$. $-8\sqrt{121}\sqrt{6}$ $-8(11)\sqrt{6}$

a) $-88\sqrt{6}$
b) $-986\sqrt{6}$
c) -90.75
d) $-2{,}904$

17) The number of school buses needed to transport students on a field trip is given by the function $f(x) = \frac{x+3}{30}$. What is the domain of the function?

a) The set of all real numbers
b) The set of all integers
c) The set of all non-negative integers
d) The set of all non-negative real numbers

18) Look at the expression $2\sqrt{8} * \sqrt{20}$. Which of the following is equivalent to it? $2\sqrt{160}$

a) $2\sqrt{28}$
b) 5
c) $8\sqrt{10}$ $2\sqrt{16}\sqrt{10}$
d) $32\sqrt{10}$ $2(4)\sqrt{10}$

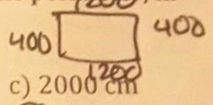
19) Which sum is rational?

a) $\pi + 18$ I
b) $\sqrt{3} + 5.5$ I
c) $\sqrt{25} + 1.75$ R
d) $\pi + \sqrt{2}$ I

20) What product is irrational?

a) $\sqrt{2} * \sqrt{50}$ $\sqrt{100}=10$ R
b) $\sqrt{9} * \sqrt{49}$ $3 \cdot 7 = 21$ R
c) $\sqrt{64} * \sqrt{4}$ $8 \cdot 2 = 16$
d) $\sqrt{10} * \sqrt{8}$ $\sqrt{80}$ = I

21) A rectangle has a length of 12 meters and a width of 400 centimeters. What is the perimeter, in centimeters, of the rectangle?



a) 824 cm
b) 1600 cm
c) 2000 cm
d) 3200 cm

22) Jill swam 200 meters in 2 minutes and 42 seconds. If each lap is 50 meters long, which is MOST LIKELY to be her time, in seconds, per lap? $\frac{200}{162} = \frac{50}{x}$ $200x = 8100$ $x = 40.5$

a) 32 seconds
b) 40 seconds
c) 48 seconds
d) 60 seconds

23) In which expression is the coefficient of linear term -1? "n"

a) $3n^2 + 4n - 1$ (Q, L, C)
b) $-2n^2 - n + 5$
c) $-n^2 + 5n + 4$
d) $4n^2 + n - 5$

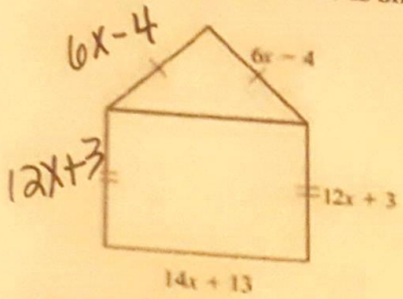
24) The expression s^2 is used to calculate the area of a square, where s is the side length of the square. What does the expression $(8x)^2$ represent?

a) The area of the square with side length of
b) The area of the square with side length of
c) The area of the square with side length of
d) The area of the square with side length of

25) What is the product of $7x - 4$ and $8x + 5$?

a) $15x + 1$
b) $30x + 2$
c) $56x^2 + 3x - 20$
d) $56x^2 - 3x + 20$

26) A model of a house is shown.



What is the perimeter, in units, of this model?

a) $32x + 12$ units
b) $46x + 25$ units
c) $50x + 11$ units
d) $64x + 24$ units

) Which expression has the same value as $(8x^2 + 2x - 6) + (5x^2 - 3x + 2)$?

a) $3x^2 - x - 4$
b) $3x^2 + 5x - 8$
c) $13x^2 - x - 4$
d) $13x^2 - 5x - 4$

This equation is used to find h, the number of rs it will take Flo and Bryan to mow their lawn.

$\frac{h}{6} + \frac{h}{3} = 1$

many hours will it take them to mow their lawn?

a) 6 hours
b) 3 hours
c) 2 hours
d) 1 hour

For what values of x is the inequality $\frac{2}{3} + \frac{x}{3} > 1$?

a) $x < 1$
b) $x > 1$
c) $x < 5$
d) $x > 5$

Which values is an irrational number?

a) $4 + \sqrt{7}$
b) $\sqrt{2}\sqrt{8}$
c) $\sqrt{3} - \sqrt{3}$
d) $\frac{\sqrt{3}\sqrt{12}}{5}$

31) A ferry boat carries passengers back and forth between two communities on the Peachville River. It takes 30 minutes longer for the ferry to make the trip upstream than downstream. The ferry's average speed in still water is 15 miles per hour. The river's current is usually 5 miles per hour.

This equation can be used to determine how many miles apart the two communities are.

$$\frac{m}{15-5} = \frac{m}{15+5} + 0.5$$

What is m, the distance between the two communities?

a) 0.5 miles
b) 5 miles
c) 10 miles
d) 15 miles

32) The measure of a squares side is 1.2 feet. What is the perimeter or the square in inches?

a) 14.4 inches
b) 19.2 inches
c) 42.2 inches
d) 57.6 inches

33) A student can run 100 yards in 15 seconds. Convert this speed to miles per hour.

100 yards	60 sec	60 min	3 feet	1 mile
14 sec	1 min	1 hr	1 yard	5280 feet

Which of the below choices would go in the missing spot to make the conversion to miles per hour?

a) $\frac{60\ min}{1\ hr}$
b) $\frac{1\ hr}{60\ min}$
c) $\frac{3600\ sec}{1\ hr}$
d) $\frac{1\ hr}{3600\ sec}$

34) Which equation shows $ax - w = 3$ solved for w?

a) $w = ax - 3$
b) $w = ax + 3$
c) $w = 3 - ax$
d) $w = 3 + ax$