Name:_____

Test – Unit 1

Directions: Please answer true or false for the following. (1 point each)

1. The commutative property says that we can change the order of numbers when performing an operation.	1. True
2. The absolute value of a number is sometimes negative.	2. False
3. When simplifying using PEMDAS, multiplication always comes before division.	3. False

Please simplify using PEMDAS. Show all of your work in a 1 operation per line fashion.

4. $-9-14\times2$ (2 points)

$-9-28$

-37

5. $-5-3(2)+12\div2$ (2 points)

$-5-6+6$

-5

6. $6-9(2+3)+3^2$ (2 points)

$6-9(2+3)+9$

$6-9(5)+9$

$6-45+9$

$15-45$

-30

7. $\frac{14-8(2)}{2^3}$ (2 points)

$\frac{14-8(2)}{8}$

$\frac{14-16}{8}$

$\frac{-2}{8}=-\frac{1}{4}$

8. $|-8-12|-|-5+7|$ (2 points)

$|-20|-|2|$

$20-2$

18

9. $-3|12-2|+|8-15|$ (2 points)

$-3|10|+|-7|$

$-3(10)+7$

$-30+7$

-23

4. -37

5. -5

6. -30

7. $-\frac{1}{4}$

8. 18

9. -23

Please write a variable expression for the following. Use appropriate formulas.

10. Four less than some number. (2 points)

11. Three consecutive integers. (2 points)

12. Three consecutive odd integers. (2 points)

13. 12 less than Sue's age triples. (2 points)

14. The distance a car travels when it travels a constant rate of 18 mph. ($D = R \cdot T$) (2 points)

15. The amount of money earned by someone who works for 31 hours. ($Pay = Rate \cdot Hours$) (2 points) $P = R \cdot 31$

16. The sum of three consecutive multiples of 6. (2 points)

Multiple 1 = x Multiple 2 = $x+6$ Multiple 3 = $x+12$

17. Five times the quantity of a number decreased by twelve. (2 points)

$5(x-12)$

10. $x-4$

11. Integer 1 = x

Integer 2 = $x+1$

Integer 3 = $x+2$

12. Integer 1 = x

Integer 2 = $x+2$

Integer 3 = $x+4$

13. $3S-12$

14. $D=18h$

15. $P=31R$

16. $x+x+6+x+12$

17. $5(x-12)$

Please simplify as indicated

18. $\frac{4}{3}-\frac{35}{14}\left(\frac{21}{5}\right)$ (2 points)

$\frac{4}{3}-\frac{21}{2}$ $\frac{8}{6}-\frac{63}{6}$ $\frac{-55}{6}$

19. $\frac{7}{5}\left(\frac{1}{2}\right)-\frac{11}{2}\left(\frac{1}{3}\right)$ (2 points)

$\frac{7}{10}-\frac{11}{6}$ $\frac{42}{60}-\frac{110}{60}=\frac{-68}{60}=\frac{-17}{15}$

18. $\frac{-55}{6}$ or $-9\frac{1}{6}$

19. $\frac{-17}{15}$ or $-1\frac{2}{15}$

20. Given that the formula for the Perimeter of a Rectangle is $P = 2w + 2h$ where w is the width and h is the height, please compute perimeter of a rectangle with a width of 11 inches and height of 8 inches. (2 points)

21. Given the formula $D = 32h$ where D is the distance traveled and h is the number of hours a car travels at 32 mph, what is the distance the car travels in 45 minutes. (2 points)

$\frac{45}{60} = .75$

20. Set up $P=2(11)+2(8)$

Answer $22+16=38$ in

21. Set up $D=32(.75)$

Answer $D=24$ miles

22. Please multiply as indicated $4(a+10)$ (1 point)

$4a+40$

23. Please multiply $-9(6-8x)$ (1 point)

$-54+72x$

Please evaluate the following expressions for the given values of the variables. (2 points each)

24. $4x^2-3xy+6 \quad x=3 \quad y=5$

$4(3)^2-3(3)(5)+6$

$4(9)-3(3)(5)+6$

$36-45+6 \quad 42-45$

-3

25. $-a^2 \quad a=-12$

$-(-12)^2$

$-(144)$

-144

26. $\frac{-3xyz}{2} \quad x=-5 \quad y=3 \quad z=2$

$\frac{-3(-5)(3)(2)}{2}$

$\frac{90}{2}=45$

27. $\frac{|a-b|}{|a|+|b|} \quad a=-6 \quad b=-3$

$\frac{|-6-(-3)|}{|-6|+|-3|}$

$\frac{|-6+3|}{|-6|+|-3|}=\frac{|-3|}{6+3}=\frac{3}{9}=\frac{1}{3}$

Please multiply as indicated. (2 points each)

28. $(k+6)(k+5)$

$k^2+5k+6k+30$

$k^2+11k+30$

29. $(x-3)(x+b+9)$

$x^2+xb+9x-3x-3b-27$

$x^2+xb+6x-3b-27$

30. $(5m+9)(2m-7)$

$10m^2-35m+18m-63$

$10m^2-17m-63$

31. $(b+6)\cdot(-8b)$

$-8b^2-48b$

22. $4a+40$

23. $-54+72x$

24. -3

25. -144

26. 45

27. $\frac{1}{3}$

28. $k^2+11k+30$

29. $x^2+xb+6x-3b-27$

30. $10m^2-17m-63$

31. $-8b^2-48b$