1. Since each bag has exactly 5 goodies the total number of goodies must be a multiple of 5. Only 63 is not a multiple of 5 so the answer is **C.**

2. Following the order of operations:

5 • 4 – [(6 + 4) ÷ 2] – 3

20 – [10 ÷ 2] – 3

20 – 5 – 3 = 12 **D**

3. The circumference of a circle is C=2πr. Plugging in r = 3 gives C=2(3)π or 6π **A**

4. The area of a triangle is A= (b•h)/2. Plugging in the values gives us (3•4)/2=6 **B**

5. The area of a circle is given by A=πr2. Plugging in r = 3 gives A=π(3)2 or 9π **A**

6. 56/256 can be written as (23•7)/(28). Cancelling the common factors gives us 7/(25) or 7/32 **B**

7. width = 5, length = 2(5) – 3 = 7, 5 • 7 = 35 **B**

8. Jennifer Red

3(2+72)+(9/3) (2•8+8/22)((33-1)/3)

=3(2+49)+3 =(2•8+8/4)((27-1)/3)

=3(51)+3 = (16+2)(26/3)

=153+3 =(18)(26/3)

=156 =156

They tied **D**

9. She spends $15.00 out of her $20.00 so she has $5.00 left. 5/20 reduces to 1/4 and so she has 25% of her money left **B**

10.

 **E**

11. A circle is the only shape where all the points are the same distance from a point in the center. **A**

12. A kite is the only quadrilateral listed that cannot have equal diagonals. **A**

13. 

**B**

14. The area of a triangle is (base•height)/2. Each tooth has an area of (3•4)/2= 6 sq. in. Since he has 35 teeth the total area of his teeth is 6•35= 210 sq. in. **B**

15.  **B**

16. Three more than six less than eight is the expression 3 + (8 - 6)= 5 **E**

17. Since d=rt we can rearrange it to be d/r=t. So in the wagon it the equation would be (3/2)/3=(3/2)(1/3)= 1/2 hr. For the walking half of Red’s trip she travels at 2 mph for 2 miles so the equation is t=2/2=1 hr. So the total time is 1/2 hr+1 hr= 3/2 hours or 1.5 hours. **D**

18. If she has traveled 2/5 of the way then she has 1-2/5=3/5 of the way to go. Three fifths of 3.5 is (3/5)(7/2)=21/10=2.1 **B**

19. Red's grandma can cut down 2(60/15)=8 trees per hour, so in 2 hours she can cut down 16 trees **C**

20. There are 12 months in a year, so 228/12=19 goodies per month **C**

21. Make a Venn diagram:

Friends who like Red’s goodies

Friends who like their own goodies

4

5

7

4

Red’s Friends

Since 5 of her friends like to make their own and Red’s goodies we place 5 in the intersection of the circles. Then subtract 5 from the number who like Red’s goodies and place it in the section for those who *only* like Red’s goodies. Then subtract 5 from the number who like their own goodies and place it in the section for those who *only* like their own goodies. Finally there are 4 friends who do not like goodies at all and they go outside of the two circles. Adding all the numbers in the diagram gives us 4 + 5 + 7 + 4 = 20  **D**

22. This is an example of the Commutative Property of Addition **C**

23. Solve for x. 3(x + 2) < 7 can be expanded into 3x + 6 < 7 to solve. Subtract 6 from both sides to get 3x < 1, and divide both sides by 3 to get x < 1/3. The greatest whole number of goodies Jason will receive is 0 **D**

24. The question is asking for the greatest common factor of 48 and 84. The factors common between 48 and 84 are 1, 2, 3, 4, 6, and 12, so our answer is 12 **D**

25. 64% is equivalent to 64/100. Simplifying this fraction gives us 16/25 **C**

26. Solve for the area of the circle and rectangle. The area of the circle is π(12/2)2= 36π and the area of the rectangle is 30 • 15 = 450, therefore the total area is 36π + 450 **B**

27.  **A**

28. 43 = 4 • 4 • 4 = 64 **A**

29. Convert Red's running speed to seconds: 360 ft/min /60= 6 ft/s. Convert Red's starting position from yards to feet (18 yards \*3= 54 feet). Then set up two expressions, one for the wolf and one for Red and set them equal to find at what time they meet. Set the variable x for the time in seconds. The expression for Red's position is 54+6x. The expression for the wolf's position is 8x. The equation is 54+6x=8x. Subtract 6x from both sides and divide both sides by 2 to get 27 seconds. Now convert seconds into minutes by dividing the time by 60 to get 27/60=9/20 minutes for the wolf to catch up to Red. **D**

30. The arithmetic sequence is 3, 6, 9, 12, 15, 18, 21, … So, 21 is the 7th term. **C**