You have 60 minutes to complete the following 30 multiple-choice questions. Choices A through D are answer c**h**oices for every problem. Choice E stands for “N**o**ne Of The Above,” or NOTA. Scoring is as follows: 5 points for a correct answer, 1 point if left unanswered, and 0 points for an incorrect response. Units are assumed.

1. **W**hat is the value of this expression ?

**A) B) 18 C) 98 D) 99 E) NOTA**

2. Hansel and Gretel are picking apart pieces of bread for bread cru**m**bs. H**a**nsel can make 30 breadcrumbs in a minute, while Gretel can make 40 breadcrumbs in a minute. Gretel was making breadcrumbs for two minutes before Hansel joined her and began working together to make bread crumbs. How long will it take them to make 500 breadcrumbs (in minutes) including Gretel’s head start?

**A) 6 B) 8 C) 12 D) 16 E) NOTA**

3. Hansel and Gretel are walking in the woods. They walk 500 feet due north, 300 feet due west, 600 feet due south, and 700 feet due east. How far, in feet, are they from their starting point?

**A) 300 B) C) 500 D) E) NOTA**

4. Hansel and Gretel walk at a rate of 400 feet in three mi**n**utes. How long with it take for them to walk one mile rounded to the nearest minute?

**A) 35 B) 37 C) 39 D) 40 E) NOTA**

5. Hansel and Gretel walk out to get firewood at an average speed of 12 miles per hour. Since they’re carrying heav**y** firewood, their average speed on the way back is 6 miles **p**er hour. How long, in minutes, did the trip take if they walked a TOTAL of 4 miles? (Assume the amount of time taken to collect the firewood is negligent)

**A) 15 B) 18 C) 20 D) 30 E) NOTA**

6. They gathered two kinds of firewood, big logs and small logs. Big logs weigh 3 pounds and small logs weigh 1 pound. If they got 40 logs and they weighed 70 pounds in total, how many big logs did they get?

**A) 10 B) 15 C) 25 D) Cannot be determined E) NOTA**

7. The number of slices of bread Hansel and Gretel’s family eats in one day is the number of irrational numbers in the following list: , π, , 0, , , . How many slices of bread does their family eat everyday?

**A) 2 B) 3 C) 4 D) 5 E) NOTA**

8. Hansel and G**r**etel live in a place with a unique currency. One bjork is equal to 3 bloms, 2 bloms are equal to 7 borgs, and 3 borgs are equal to 12 bjarnes. The kids’ father has to buy enough bread for a week (their family eats two slices of bread a day), and each slice of bread costs 3 bjarnes. If the father only has bjorks, how many bjorks should he pay the baker?

**A) 1 B) 2 C) 4 D) 6 E) NOTA**

9. What is the area bound by the graphs of and?

**A) 5 B) C) 25 D) 50 E) NOTA**

10. What is the equation of the l**i**ne containing the points (5,12) and (-3,-4) in slope-intercept for**m**?

**A) B) C)**

**D) E) NOTA**

11. On**e** day, Han**s**el and Gretel’s parents told them to fetch some water at the stream and take it to their grandmother’s house. If Hansel and Gretel’s house is at the point (3,5), their grandmother’s house is at (2,-3), and the stream is at x = 1, what is the **s**hortest distance to their grandmother’**s** house (while stopping at the stream to get her water)?

**A) 16 B)  C) D)   E) NOTA**

12. Hansel and Gretel arrive at an amazing sight after wandering the woods for so long. A house of candy! Upon closer inspection, Gretel notices that each face of the cubical house, except for the bottom, has 736 pieces of c**a**ndy on it. If of all the candies aren’t peppermints, then how many peppermints are on the house in total?

**A) 920 B) 1104 C) 2760 D) 3282 E) NOTA**

13. Let . What is (4&2)&2 ?

**A) 14 B) 42 C) 182 D) 189 E) NOTA**

14. An old woman comes out of the house they have stumbled upon. She says, “I will let you eat some of my lovely home if you can facto**r** completely.” Hansel answers correctly. Which of these is one of the factors?

**A) B) C) D) Cannot be factored E) NOTA**

15. And so th**e**y begin eating. Hansel eats at a rate of seven **b**ites in one minute. Gretel eats at a rate of fifteen bites in two minutes. How many bites will they have taken in total after forty-five minutes if Gretel stops three minutes before Hansel because she is so full?

**A) 560 B) 630 C) 652.5 D) 945 E) NOTA**

16. After Hansel and Gretel eat parts of her house, the old woman continues to offer them food. She has milk, pancakes, apples, and nuts. How many combinations of food/drink are ther**e** if Hansel and Gretel only have enough room in their stomachs for three choices?

**A) 1 B) 3 C) 4 D) 6 E) NOTA**

17. **T**he old woman is in reality a **w**itch. The number of years she has been at this evil job is equal to the coefficient of the linear term of this expression expanded: . How many years has she been a witch?

**A) 6 B) 53 C) 493**

**D) She can’t have worked a negative number of years, silly! E) NOTA**

18. Simplify. Assume a, b, and c are all not equal to z**e**ro.

**A) B) C) D) E) NOTA**

19. The witch locks Hansel in a cage, planning to fatten him up so she can eat him in time for Thanksgiving. If Thanksgiving is 8 weeks from four days after 52 days ago, and today is a Tuesday, what day is Thanksgiving on? (Where Hansel and Gretel live, Thanksgiving is not n**e**c**e**ssarily on a Thursday!)

**A) Saturday B) Sunday C) Wednesday D) Thursday E) NOTA**

20. Gretel, meanwhile, has been enlisted as the witch’s personal servant and is forced to survive off of the candy on the house. Every day, she has to polish as many of the witch’s “Richest Witch” trophies as she can. The witch tells her, “If the median number of trophies you polish daily is less than the mean this week, I will give you actually nutritious food.” The number of trophies she polished each day this week are 39, 24, 29, 33, 28, 23, and 20. What is the mean, and does she get **n**utritious food for once?

**A) 27; no B) 28; yes C) 28; no D) 29; yes E) NOTA**

21. Write in simple radical form:

**A) B) C) D) Cannot be simplified E) NOTA**

22. Because the witch is trying to get Hansel fat, she feeds him several rotisserie pheasants a day. The number of rotisserie pheasants she feeds him is equal to the degree of the following polynomial:

**A) 18 B) 19 C) 20 D) 21 E) NOTA**

23. The witch determines that to be an enjoyable meal, Hansel needs to weigh at least 60% more than he did when he arrived at her house. If he weighed 25 kil**o**grams when he arrived, and one kilogram is about 2.2 pounds, what is the least number of pounds Hansel should weigh to be an enjoyable meal?

**A) 33 B) 40 C) 55 D) 88 E) NOTA**

24. What are the roots of the equatio**n** ?

**A) -4, -1 B) 1, 5 C) 1, 4**

**D) Roots gather water and food for the rest of the plant E) NOTA**

25. x2(x + 1) = x2(1 + x) is an example of which property?

**A) Associative Property B) Communicative Property C) Distributive Property**

**D) Commutative Property E) NOTA**

26. What is two times the quantity of eight plus the quantity of twelve divided by four?

**A) 7 B) 10 C) 19 D) 22 E) NOTA**

27. The opening of the witch’s child-cooking oven is a rectangle with dimensions by

feet. If Hansel’s body can be represented as a rectangle with dimensions by feet, and , will the witch be able to shove Hansel into the ov**e**n? (For this question, imagine they live in a 2-D world.)

**A) Yes B) No C) Maybe D) cannot be determined E) NOTA**

28. Gretel, tired of polishing trophies and watching her brother’s figure deteriorate, decides to take matters into her own h**and**s. An experienced weightlifter and athlete, she grabs the witch and throws her into the oven in a perfect parabola with the equation where y represents the height of the witch after x seconds. What is the maximum height the witch reached?

**A) -1.5 B) -1 C) 1 D) 1.5 E) NOTA**

29. With the witch out of the way, Hansel and Gretel turn her house into a candy shop! Hansel specializes in making black licorice rolls. One day, he makes licorice rolls. He sells one third of the rolls in the morning, three-fif**t**hs of what’s remaining of the morning sale in the afternoon, and of what’s remaining of the afternoon sale in the evening. He has six rolls left at the end of the day. How many rolls did Hansel s**e**ll that day?

**A) 6 B) 36 C) 40 D) 60 E) NOTA**

30. The “breadcrumbs” left throughout the test ask a question. What is the answer to that questio**n?** But, look at the introduction on the cover page and the questions only!

**A) 3 B) 4 C) 5 D) 42 E) NOTA**