

1. Daniel and co. (Shawn, Roger, and Lily) are sitting at a round table to discuss their options on how to explore the beautiful prairie. How many distinct ways are there to arrange Daniel and all of his cronies if rotations are considered to be equivalent?  
A. 24                      B. 6                      C. 12                      D. 120                      E. NOTA
2. Daniel was embracing his inner Dora when he spotted a beautiful pronghorn! How many ways are there to arrange the letters in “pronghorn”?  
A. 45                      B. 720                      C. 5780                      D. 362880                      E. NOTA
3. Oh no! Lily has angered the pronghorn! If the pronghorn is charging at Lily with a constant speed of 20 feet a second, and Lily and the pronghorn are 130 yards apart, how many seconds will it take for them to collide? Round up to the nearest whole number. (Assume Lily doesn’t move.)  
A. 6                      B. 19                      C. 20                      D. 7                      E. NOTA
4. Daniel begins to laugh at Lily so hard that he rolls down the hill! If he starts at the point (9,10) and rolls to (6,1), what is the slope of the hill?  
A. 3                      B.  $\frac{1}{3}$                       C.  $-\frac{1}{3}$                       D. -3                      E. NOTA
5. Uh-oh. A coyote spotted Daniel! The coyote tells him he must get this question right in order to escape: Let  $a \star b = 3a + 4b - 2ab$ . What is  $5 \star 3$ ? Assuming Daniel got it right, what did he say?  
A. 0                      B. 15                      C. -1                      D. -3                      E. NOTA
6. However, the coyote tricked him! The coyote demands  $x$  amount of treats from Daniel. If the amount of treats equals the positive solution of  $3x^2 + 9x - 12 = 0$ . How many treats should Daniel give the dog?  
A. -4                      B. 1                      C. 3                      D. 4                      E. NOTA
7. Meanwhile, Shawn is reading a book about the prairie ecosystem. If the book has pages numbered 1 – 99, what is the sum of all the page numbers in his book?  
A. 4950                      B. 9900                      C. 99                      D. 3850                      E. NOTA
8. If  $45 - 3x \geq 120$ , which of the following statements is true?  
A.  $x \geq -25$                       B.  $x \geq 55$                       C.  $x > 25$                       D.  $x \leq -55$                       E. NOTA
9. What is the sum of the prime factor(s) of 512 if we allow for repetition? For example, the sum of the prime factors of 9 would be  $3 + 3 = 6$  since  $9 = 3^2$ .  
A. 18                      B. 2                      C. 8                      D. 512                      E. NOTA
10. Shawn learns that prairies once covered about 40% of the United States! What is 40% expressed as a fraction in simplest form?  
A.  $\frac{3}{8}$                       B.  $\frac{4}{10}$                       C.  $\frac{3}{5}$                       D.  $\frac{2}{5}$                       E. NOTA
11. Daniel and co. see a group of prairie dogs! If their relative position  $x$  to the closest dog satisfies  $0 = 3x^3 + x^2 + 2$ , what is  $x$ ?  
A. -1                      B. 0                      C. 1                      D. 0.5                      E. NOTA
12. Lily wants a prairie dog. To get a prairie dog, she has to roll a 10 on a fair 10-sided die. How many rolls on average would it take for her to win?  
A. 10                      B. 5                      C. 1                      D. 100                      E. NOTA

13. The prairie is getting hot! If on Friday the temperature is  $80^\circ$  and the temperature increases 10% every day, what will the temperature be on Monday? (All units are in Fahrenheit).
- A.  $96^\circ$                       B.  $96.8^\circ$                       C.  $104^\circ$                       D.  $106.48^\circ$                       E. NOTA
14. Lily has gotten absolutely trucked by the pronghorn! The doctor says to sleep a number of hours equal to the least common multiple of 28 and 72. How many hours should Lily sleep?
- A. 882                      B. 126                      C. 2016                      D. 504                      E. NOTA
15. Lily wants to bring the prairie dog home. Assuming her house is at  $(-1, -1)$  and she is currently at  $(6, 7)$ , what is the least distance it will take for her to go home?
- A. 11                      B.  $7\sqrt{2}$                       C.  $\sqrt{113}$                       D.  $\sqrt{85}$                       E. NOTA
16. Lily wants to go to the river at  $y = -3$  on her way home. What is the least distance Lily can take to visit the river on her way home? Use the same locations as the last problem.
- A.  $\sqrt{113}$                       B.  $\sqrt{171}$                       C.  $\sqrt{217}$                       D.  $\sqrt{219}$                       E. NOTA
17. Once home, Lily wants to dress her prairie dog up. She has 3 hoodies, 2 pairs of pants, and 6 socks. Each prairie dog needs a hoodie, 1 pair of pants, and 3 socks. How many unique ways to dress her prairie dog?
- A. 60                      B. 120                      C. 90                      D. 144                      E. NOTA
18. Daniel throws a prairie dog that follows the trajectory of  $y = -x^2 + 2x + 8$ . With  $x$  the prairie dog's relative distance to Daniel in dozens of feet and  $y$  representing the height of the prairie dog in feet. If the prairie dog starts and ends at height 0 and travels a nonzero distance, how many feet away from Daniel does the prairie dog touch the ground?
- A. 24                      B. 4                      C. 8                      D. 48                      E. NOTA
19. Daniel realizes how talented he is and is drafted as the 11th pick in the 2030 NFL draft. What is the 11th prime number?
- A. 23                      B. 29                      C. 31                      D. 37                      E. NOTA
20. On his way to watch the Buffalo Bills (the team the Seattle Seahawks beat in the Super Bowl) game, Daniel sees Aaron playing in an NBA game with LeBron James and Austin Reaves. Aaron was the 8th pick in the 2025 NBA draft. What's the 8th triangular number?
- A. 36                      B. 78                      C. 72                      D. 21                      E. NOTA
21. Daniel sees a buffalo on the way to New York! If there are 3 buffaloes in a herd and there are 3 herds, how many ways are there to order the buffaloes in a line if the buffaloes within each herd must stay together?
- A. 72                      B. 144                      C. 216                      D. 1296                      E. NOTA
22. On the way to the Seattle Seahawks, Lily is also passing through the prairie (in the opposite way as Daniel) and spotted George the Monkey! George has a standard  $8 \times 8$  chessboard. How many rectangles can be made using the squares on the chessboard?
- A. 204                      B. 720                      C. 960                      D. 1296                      E. NOTA
23. George the Monkey also has prairie dogs following him and typing his English essay for him (don't do this). Roger (prairie dog 1) can type a sentence in 4 minutes and Shawn (prairie dog 2) can type 2 sentences in 5 minutes. How many sentences can they type in 20 minutes?
- A. 8                      B. 9                      C. 13                      D. 21                      E. NOTA

24. The word prairie originates from the Latin word “pratum,” meaning meadow. If  $a$  is a natural number that is equal to the square of itself, what is the value of  $x$  that satisfies  $ax^2 - 2x + 2 = 1$ ?
- A.  $-1$                       B.  $0$                       C.  $1$                       D.  $\sqrt{3}$                       E. NOTA
25. If 20 plant species support 3 bird species, 4 bird species support one individual prairie dog, there are 100 plant species in 5 acres of prairie, and there are 640 acres in a square mile, how many prairie dogs can a 4 mile  $\times$  5 mile section of prairie support?
- A. 9600                      B. 15360                      C. 38400                      D. 69120                      E. NOTA
26. Prairie dogs love grass! If Tommy the prairie dog eats 1 cubic foot of grass each day, how many cubic inches of grass does he eat in 3 days?
- A. 3                      B. 27                      C. 243                      D. 2187                      E. NOTA
27. Daniel is terrified of snakes! Daniel runs at  $x$  feet per second where  $x$  satisfies  $\frac{7x+6}{4} = 5$ . If there is a rattlesnake 24 yards away from Daniel that is chasing him at 8 feet per second, how long will Daniel last before getting caught? Assume both Daniel and the rattlesnake move in a straight line and Daniel is running away from the rattlesnake.
- A. 10 seconds                      B. 12 minutes                      C. 8 seconds                      D. 8 minutes                      E. NOTA
28. After surviving the wonderful prairie, Daniel, Shawn, Roger, and Lily all high-five each other once. How many times did they high-five in total?
- A. 3                      B. 6                      C. 9                      D. 15                      E. NOTA
29. Timmy and Tommy the prairie dogs are best friends, but they are arguing about who is right. Given the equation  $x^2 - 3x + 2 = 0$ , Timmy says  $x$  is 1, but Tommy says  $x$  is 2. Who is right?
- A. Timmy                      B. Tommy                      C. Neither is right                      D. Both are right                      E. NOTA
30. Timmy’s favorite food is an avocado. How many distinct permutations of the letters in “AVOCADO” are there?
- A. 630                      B. 1260                      C. 2520                      D. 5040                      E. NOTA