Test Writer: Nicholas Yang

1. Volume=(Length)(Width)(Height)=(2m)(3m)(4m)=**24m³ (D)**
2. 3^3=27 and 2^4=16. 27+16=**43 (C)**
3. Watch order of operations: 1+2+3+4+5×0=1+2+3+4=**10 (C)**
4. Substitute -50 for ℃: $\frac{9}{5}$×(-50)+32=-90+32=**-58 (C)**
5. Amanda needs to choose one jacket, one sweatshirt, and one pair of pants. There are 3 jackets, 5 sweatshirts, and 2 pairs of pants. Multiply each of them together, and we get $3\times5\times2=$ **30 (D)**
6. Add all of the values together: $2.35+$1.95+$6.25+$2.20=**$12.75 (A)**
7. We divide $10.00 by $.65 (Watch the decimal point!) and get $15\frac{25}{65}$ or $15\frac{5}{13}$. Since Grace cannot buy a fraction of a mango, the most mangoes she can buy is **15 (C)**
8. Notice that one of the terms is (5-5) which is equal to 0. Since the entire thing is being multiplied, the entire thing will be equal to **0 (C)**
9. 99+97+110+99+102+93=600. Since there are 6 penguins, the mean height will be $\frac{600}{6}$=**100 (B)**
10. Listing the values in order from least to greatest (72, 93, 97, 99, 99, 102, 110) we see that the number in the middle is **99 (A)**
11. Since there are 42 sides, the perimeter will be 1.5×42=63. However, we want the answer in yards. Since there are 3 feet per yard, the perimeter will be $\frac{63}{3}$=**21 (B)**
12. We will count the orders:
    1) Cube, Sphere, Star
    2) Cube, Star, Sphere
    3) Star, Cube, Sphere
    4) Star, Sphere, Cube
    5) Sphere, Star, Cube
    6) Sphere, Cube, Star
    Therefore, the answer is **6 (D)**
13. Plugging in r=3, h=14, and $\pi=\frac{22}{7}$, we get Volume=$3^2\times14\times\frac{22}{7}$ =$9\times14\times\frac{22}{7}$ =$126\times\frac{22}{7}$ =2772÷7=**396 (C)**
14. Each day, Jeffery finds 5 more ice cubes. Therefore, on the fourth day he will find 18; on the fifth day he will find 23; on the sixth day he will find 28; and on the seventh day he will find **33 (B)**
15. Bailey sailed 25 miles each hour. Since there are 24 hours in each day, she sailed 25×24=600 miles each day. She sailed for 20 days, so her total distance was 600×20=**12000 (D)**

16. If $\dfrac{1}{2}$ of the animals are polar bears and $\dfrac{2}{5}$ are seals and the rest are foxes, that means that
$1-\dfrac{1}{2}-\dfrac{2}{5}=\dfrac{10}{10}-\dfrac{5}{10}-\dfrac{4}{10}=\dfrac{1}{10}$ of the animals are foxes. There are 6 foxes, which means 6 is
$\dfrac{1}{10}$ of the total number of animals. The total number of animals is $6\times10=\mathbf{60}\,\mathbf{(D)}$

17. If 85% of the whales are adults, that means 100%-85%=15% of the whales are children. 15%
as a fraction is $\dfrac{15}{100}$, which reduces to $\dfrac{\mathbf{3}}{\mathbf{20}}$ **(A)**

18. Chase always plays Rock, which means Wayne will win if he plays Paper. Since he plays any
of the three options randomly, the probability that he will win in the first try is $\dfrac{\mathbf{1}}{\mathbf{3}}$ **(A)**

19. Joyce runs toward David at 6 feet per second, and David runs away from Joyce at 4 feet per
second. That means relative to each other, Joyce is moving toward David at 2 feet per
second. Since Joyce starts out 600 feet behind David, it will take $\dfrac{600}{2}$=300 seconds for Joyce
to catch David. However, the final answer is wanted in minutes, and since there are 60
seconds per minute, the number of minutes will be $\dfrac{300}{60}$=**5 (A)**

20. Prime numbers are numbers that are only divisible by 1 and themselves. The first 8 prime
numbers are 2, 3, 5, 7, 11, 13, 17, and 19. 2+3+5+7+11+13+17+19=**77 (D)**

21. If December 10 is a Saturday, December 17 (10+7) will also be a Saturday, and so will
December 24 (17+7). If December 24 is a Saturday, then December 25 is a **Sunday (C)**

22. The perimeter of a rectangle is equal to twice the length plus twice the width, or perimeter=
$2l+2w$. The length is 12 and the width is 5, so the perimeter is equal to $2\times12+2\times5=\mathbf{34}$
(B) E is also accepted because the answer is in feet but all the choices are in square feet.

23. If snow is falling at 2 inches every half hour, that means every hour, snow will pile up 4
inches. If at 8:00 AM the snow is 10 inches deep, that means at 9:00 AM the snow will be 14
inches deep; at 10 AM the snow will be 18 inches deep; at 11 AM the snow will be 22 inches
deep. Since 2 inches fall every half hour, the snow will reach 24 inches or 2 feet at **11:30 AM
(A)**

24. Since $6x+42=102$, we have $6x=60$ and $x=10$. However, we want $3x+21$. Plugging 10 in
for x, we get $3\times10+21=30+21=\mathbf{51}\,\mathbf{(E)}$

25. 250 Pikachus at \$20 each will cost $250\times\$20=\mathbf{\$5000}\,\mathbf{(D)}$

26. The probability you will pick a vowel is equal to (number of vowels) divided by (total
number of letters). Since there are 3 vowels and 6 letters, the probability is equal to $\dfrac{3}{6}$ or $\dfrac{\mathbf{1}}{\mathbf{2}}$
(C)

27. We should convert all three distances into the same unit, meters. Since there are 1000
meters per kilometer, 2.5 kilometers is equal to $2.5\times1000=2500$ meters. 1 meter is equal
to 100 centimeters, so 1000 centimeters is equal to $\dfrac{1000}{100}=10$ meters. 2500+800+10=**3310**
(B)

28. The 123456789 in the numerator and denominator cancel out, so we are left with $\dfrac{6}{2} = $ **3 (B)**

29. A, B, C, and D are all equal to 8, so the answer is **(E)**

30. **(E)** Just kidding. **(A)**