1.	D	16.	B
2.	E	17.	C
3.	C	18.	C
4.	B	19.	B
5.	A	20.	A
6.	A	21.	A
7.	C	22.	E
8.	C	23.	B
9.	B	24.	D
10.	D	25.	B
11.	A	26.	C
12.	C	27.	B
13.	D	28.	A
14.	A	29.	B
15.	C	30.	D

1. D: 4+5+6+7=22
2. E. Since sin(180)=0, the product is 0.
3. C. $a_1 + 9(4) = 12;\ a_1 = -24$.
4. B. Using the change of base rule: $\frac{\log 3}{\log 2} \cdot \frac{\log 4}{\log 3} \cdot ... \cdot \frac{\log 8}{\log 7}$ which reduces tolog8/log2 which is 3.
5. A.
6. A. THe first four terms are $i + -1 + -i + 1$ and that sum is 0. Every next group of 4 terms also adds to 0.
7. C. The absolute value of all terms is 1. So this is 1+1+… added 20 times, which is 20.
8. C. The common ratio is 1/2, so T/U is the reciprocal of that.
9. B. $a_1 + 2d = 1$; $a_1 + 9d = 20$ solves to d=19/7.
10. D. The first term is 0, and the next term isthe first term times 4, which is 0, and on and on. The sum of 400 zeros is 0.
11. A. This is the Fibonacci sequence. 1, 1, 2, 3, 5, 8, 13, … and the difference between the sixth and fifth terms is 3, which equals the fourth term.
12. C. The terms are $0.90a_2, a_2, ...$ and $a_2 \div a_1 = 1 \div 0.9 = \frac{10}{9}$, so the common ratio is10/9. Therefore the third term is 10/9 times the second term and $10a_2 / 9 = 1000$ solves to the second term is 900. So the first term is 9/10 of that. Which is 810.
13. D. Each increase is 15%, making the common ratio 1.15.
14. A. Let the sequence be $2, 2r, 2r^2, 2r^3$ and the last is -54. Solve this to get r= -3. Themeans are then -6 and 18, making the answer -6.
15. C. The difference between the second andfourth term is 14, so the common difference is 7. g=20+7=27.

16. B. $\frac{1}{4} - \frac{1}{2} + 1 + 2 + 4 = 7 - 0.25$
17. C. The sum of the roots is –B/A, 8, so a+b=8 and a-1=b-a, and this solves to a=3.So the terms are 1, 3, 5 and the product of the roots (k) is 15.
18. C. If the third and first term divide to 9 then the common ratio is 3. So $a_1 + 3a_1 = \frac{4}{3}$ and so $a_1 = \frac{1}{3}$. That makes the terms 1/3, 1, 3, 9.
19. B. The product is requested: 2(3)(4)(5).
20. A. If $\sqrt{a + \sqrt{a + ...}} = p; \sqrt{a + p} = p$ and $p^2 - p - a = 0$. The roots are p and p-1 where p is positive. The product of the roots is p(p-1), which is a.

21. A. Dividing by 1/2 is the same as multiplyingby 2. So $2(2^1 + 2^2 + ... + 2^8)$ equals $2^2 + 2^3 + ... + 2^9$, which is choice A.
22. E. At x=11, we get 10!.

23. B. $\frac{a_1}{1-r}=\frac{\frac{1}{2}}{1-\frac{1}{\sqrt{3}}}$ and multiplying by $\frac{2\sqrt{3}}{2\sqrt{3}}$ gives $\frac{\sqrt{3}}{2\sqrt{3}-2}$ which rationalizesand reduces to $\frac{3+\sqrt{3}}{4}$ so a=3.

24. D. $(i)^{1/5}=(cis\frac{\pi}{2})^{1/5}$ and by DeMoivre'sTheorem we get $cis\frac{\pi}{10}$. Each root is $2\pi \div 5$ apart, so $\frac{\pi}{10}+\frac{4\pi}{5}$ gives the third angle. pi/10.

25. B. 2 times the sum (15) equals $x+x^2$. So $x^2+x-30=0$ and the roots are 5 and -6. The positive value is 5.
26. C. The original square gained 2 on each side,and the area of that square was 3 squared. Each four terms will gain two on each side, and the area is that value squared. So the areathrough the 9th term is 25, the area through13th term is 49 and the 17th term gives area 81.
27. B. 64 has a cube root (n=2) and a sixth root(n=5) for n greater than 1. There are twovalues for n>1 that are integral.
28. A. The sum of the values of C(100,n) forn equals 0 to 100 gives 2^{100}, and if we omitthe value of C(100,0) and C(100,100) then we subtract 2.
29. B. Let AB=k. $\frac{1}{2}(AB)h:\frac{1}{2}(AC)h$ forthe same height h, gives AB:AC equal to5:1. So BC=4k. Likewise, CD=20k, and DE=100k.
30. D. The terms are -1, 2, -4, 8. This gives the expression $\sum_{n=1}^{4}(-1)^n(2)^{n-1}$.