

Pre Calculus/Calculus Placement Test

Answer the following questions on the answer sheet.

If you do not know an answer, select (5).

1. $4^{\frac{3}{2}} =$

- (1) 12 (2) $\frac{3}{16}$ (3) 8 (4) $2^{\frac{2}{3}}$ (5) don't know

2. $(a + b)^2 =$

- (1) $a + b$ (2) $a^2 + b^2$ (3) $2a + 2b$ (4) $a^2 + 2ab + b^2$ (5) don't know

3. $\sqrt{x^2} =$

- (1) x (2) $-x$ (3) $|x|$ (4) $x^{\sqrt{2}}$ (5) don't know

4. $(b^2)^3 =$

- (1) b^5 (2) $b^{\frac{2}{3}}$ (3) b^6 (4) b^8 (5) don't know

5. $(uv^2)^{\frac{1}{2}} =$

- (1) $vu^{\frac{1}{2}}$ (2) uv (3) $u^{\frac{3}{2}}v^{\frac{5}{2}}$ (4) $u^{\frac{1}{2}}v^4$ (5) don't know

6. The solution of $2x - 3 = 7 - x$ is

- (1) $\frac{10}{3}$ (2) 10 (3) $5 - x$ (4) $3x - 10$ (5) don't know

7. $(x^3 - 2x^2) + (2x^2 - 2x^3) =$

- (1) $x^3 + 4x^2$ (2) $x^3 - 4x^2$ (3) $-x^3$ (4) $-2x^6$ (5) don't know

8. The solutions of $x^2 - 4x = 5$ are

- (1) 1 and 5 (2) -1 and 5 (3) -2 and 10 (4) 4 and 5 (5) don't know

9. $\frac{1}{x} + \frac{1}{x-1} =$

- (1) $\frac{1}{x(x-1)}$ (2) $\frac{2}{2x-1}$ (3) $\frac{x-1}{x}$ (4) $\frac{2x-1}{x(x-1)}$ (5) don't know

10. Solving $5a + b = ab$ for a yields:

- (1) $a = \frac{b}{5+b}$ (2) $a = -\frac{b}{5}$ (3) $a = -\frac{b}{5-b}$ (4) $a = -\frac{1}{5}$ (5) don't know

11. The distance between points $(1, 0)$ and $(4, 7)$ is

- (1) 5 (2) 7 (3) $\sqrt{41}$ (4) $\sqrt{58}$ (5) don't know

12. The slope of the line through $(1, -3)$ and $(-3, -2)$ is

- (1) $\frac{1}{4}$ (2) 4 (3) $-\frac{5}{2}$ (4) $-\frac{1}{4}$ (5) don't know

13. If $f(x) = x^2$ and $g(x) = x + 1$ then $f(g(x)) =$

- (1) $x^2 + 1$ (2) $(x + 1)^2$ (3) $x^3 + 1$ (4) $x^2(x + 1)$ (5) don't know

14. If $\sin t = \frac{4}{5}$ and t is in the second quadrant, then $\cos t =$

- (1) $3/4$ (2) $3/5$ (3) $-3/5$ (4) $-1/2$ (5) don't know

15. If $\log_{10} x = -3$ then $x =$

- (1) $\sqrt[3]{10}$ (2) -30 (3) 1000 (4) .001 (5) don't know

16. $\ln\left(\tan\left(\frac{\pi}{4}\right)\right) =$

- (1) -1 (2) 1 (3) 0 (4) $\frac{\pi}{4}$ (5) don't know

17. If $f(x) = \sin x$, then $f\left(\frac{3\pi}{2}\right) =$

- (1) 1 (2) $\frac{\sqrt{2}}{2}$ (3) $-\frac{\sqrt{2}}{2}$ (4) -1 (5) don't know

18. The derivative of $8x^2$ is

- (1) $16x$ (2) $8x$ (3) 8 (4) $4x^2$ (5) don't know

correct (do not count #18...that's just FYI)

11 -17	Belongs in 201	- Calc I
9 -10	Borderline 201/122	
7 - 8	Belongs in 122	- Pre Calculus
0 - 6	Belongs in 111	- Algebra

SOLUTIONS

1. 3
2. 4
3. 3
4. 3
5. 1
6. 1
7. 3
8. 2
9. 4
10. 3
11. 4
12. 4
13. 2
14. 3
15. 4
16. 3
17. 4
18. 1