Calculus AB Homework # 1

1. If $a = 2$ and $b = -3$, then $\dfrac{(a-b)^2 + b}{(b-2a)^2 + a} =$

2. In the system of equations $\begin{cases} 3x + y = 1 \\ x - 3y = 17 \end{cases}$, $x =$

3. $\left(27a^{-3}b^6c^3\right)^{\frac{1}{3}} =$ (No negative exponents)

4. For what value of ***t*** does $\dfrac{2t-1}{t+3} = -2$

5. The line segment in the figure shown is a portion of the the line whose equation is:

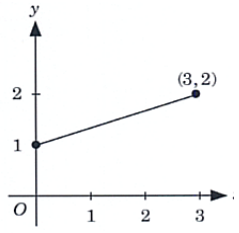


Figure: #5

6. If $8^{2-x} = 4^{3x}$, then $x =$

7. $\left(\dfrac{(a+b)^2}{a^2-b^2}\right)\left(\dfrac{a-b}{a+b}\right) =$

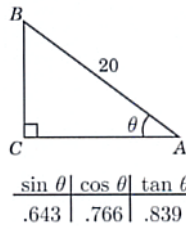
8. What is the radian measure of an angle whose degree measure is 72°?

9. If $f(x) = x^2 + 2x + 3$, then $f(a-1) =$

10. $\dfrac{x+1}{x(x-1)} - \dfrac{1}{2(x-1)} =$

11. If $f(x) = ax + b$ and $f(2) = f(4)$, then $a =$

12. From the information given in the table and in the figure shown, which of the following best approximates BC?



sin θ	cos θ	tan θ
.643	.766	.839

Figure: #12

13. $\dfrac{\dfrac{21-7x}{x+3}}{\dfrac{x^2-3x}{2x+3}} =$

14. The area of the square ABCD shown is:

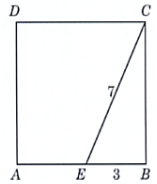


Figure: #14

15. $\dfrac{x^{4b+1}}{x^{2-b}} =$

16. Find the roots of $x^2 - 5x - 2 = 0$

17. In the figure shown, $\tan\theta =$

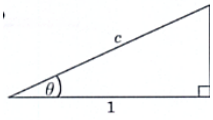


Figure: #17

18. The perimeter of a rectangular field is P feet. The width of the field is 200 less than its length. In terms of P, what is the length of the field in feet?

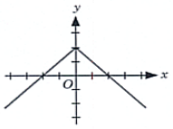


Figure: #20

19. If $x + a = \frac{b}{3}x$ and $b \neq 3$, then $x =$

20. The graph of ***y = h(x)*** is shown in the figure. Sketch the graph of ***y = h(x + 2).***

Additional Questions for BC

21. Factor $(x+1)$

Figure: #22

22. In triangle ABC shown in the figure, If the radian measure of angle C is $\frac{\pi}{6}$, what is the length of BC?

23. Simplify: $\frac{x^{\frac{1}{3}}+1}{x+1}$

24. Simplify: $\frac{\sqrt[4]{3}\cdot\sqrt[5]{3}}{\sqrt{2^3+1}} =$

25. $\lim_{x\to 2}\frac{x^2-4}{x^2+4} =$

26. Find the equation normal to x^3+4x^2-5 at x = 2.

27. Solve the Inequality $|x-4|>3$.