Name: _____

Math 433: HW #82 (Review for Third Quarter Exam #2)

Due: Mon, April 8

1) What is the range of $f(x) = (x + 4)^2 + 7$?

A) $y \geq 4$ C) $y \geq -4$

B) $y \geq 7$ D) $y = 7$

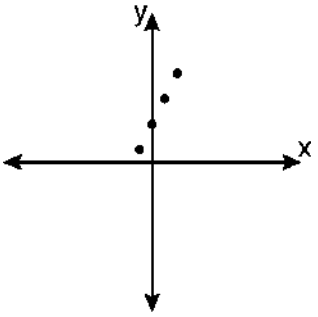
2) Which one of the following relations is *not* a function?

A) $x^2 + 4x + y = 4$ C) $(x - 2)^2 + y^2 = 4$

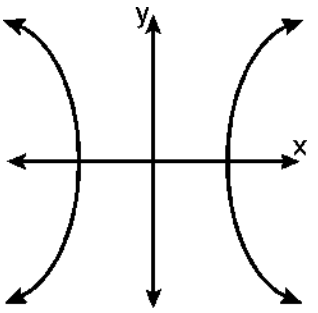
B) $xy = 4$ D) $x + y = 4$

3) Which graph does *not* represent a function?

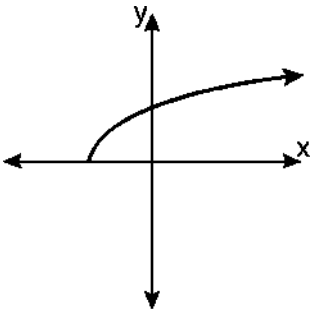
A)



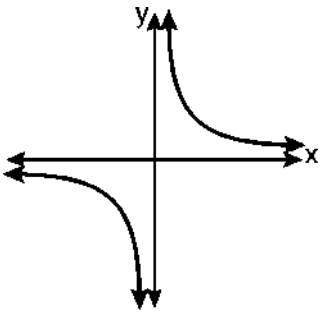
B)



C)



D)



4) If $\angle A$ is acute and $\tan A = \frac{2}{3}$, then

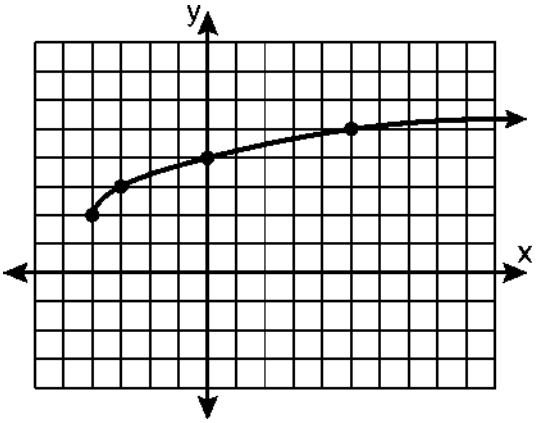
A) $\cot(90° - A) = \frac{2}{3}$ C) $\cot(90° - A) = \frac{1}{3}$

B) $\cot A = \frac{2}{3}$ D) $\cot A = \frac{1}{3}$

5) The straight string of a kite makes an angle of elevation from the ground of 60°. The length of the string is 400 feet. What is the best approximation of the height of the kite?

A) 200 ft
B) 250 ft
C) 300 ft
D) 350 ft

6) What are the domain and the range of the function shown in the graph below?



A) $\{x \mid x > 2\}; \{y \mid y > -4\}$
B) $\{x \mid x \geq 2\}; \{y \mid y \geq -4\}$
C) $\{x \mid x > -4\}; \{y \mid y > 2\}$
D) $\{x \mid x \geq -4\}; \{y \mid y \geq 2\}$

7) If $f(x) = x^2 - 5$ and $g(x) = 6x$, then $g(f(x))$ is equal to

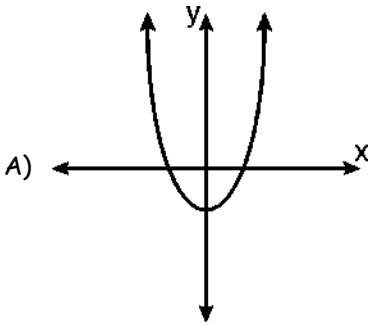
A) $6x^2 - 30$
B) $x^2 + 6x - 5$
C) $36x^2 - 5$
D) $6x^3 - 30x$

8) If $r = \sqrt[3]{\frac{A^2B}{C}}$, then $\log r$ can be represented by

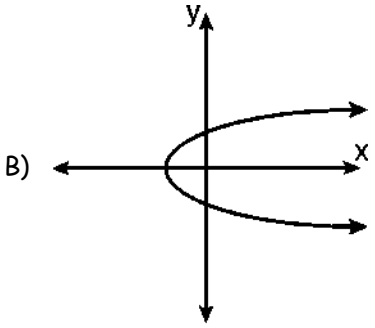
A) $\frac{1}{6}\log A + \frac{1}{3}\log B - \log C$
B) $3(\log A^2 + \log B - \log C)$
C) $\frac{2}{3}\log A + \frac{1}{3}\log B - \frac{1}{3}\log C$
D) $\frac{1}{3}\log (A^2 + B) - C$

9) Which graph represents a one-to-one function?

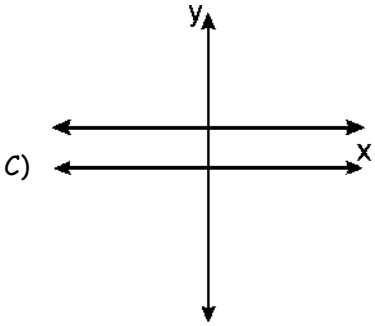
A)



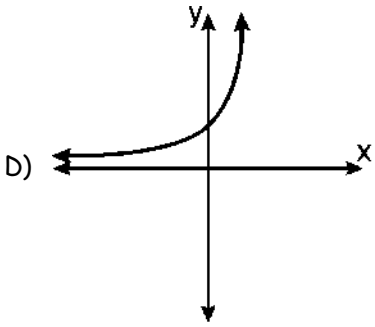
B)



C)



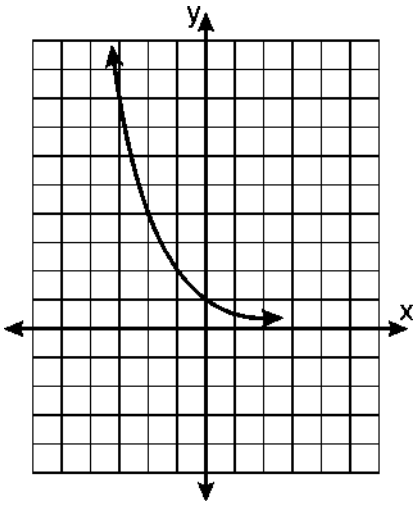
D)



10) The expression $x^{-\frac{2}{5}}$ is equivalent to

A) $-\sqrt[2]{x^5}$
B) $\frac{1}{\sqrt[5]{x^2}}$
C) $\frac{1}{\sqrt[2]{x^5}}$
D) $-\sqrt[5]{x^2}$

11) Which equation is represented by the graph below?



A) $y = 0.5^x$
C) $y = 5^{-x}$
B) $y = 0.5^{-x}$
D) $y = 5^x$

12) The expression $\log_5 \left(\frac{1}{25}\right)$ is equivalent to

A) $\frac{1}{2}$
C) $-\frac{1}{2}$
B) -2
D) 2

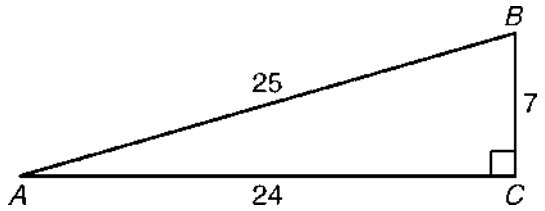
13) Expressed as a function of a positive acute angle, cos (-305°) is equal to

A) -sin 55°
C) cos 55°
B) sin 55°
D) -cos 55°

14) What is the domain of the function $f(x) = \sqrt{x-2} + 3$?

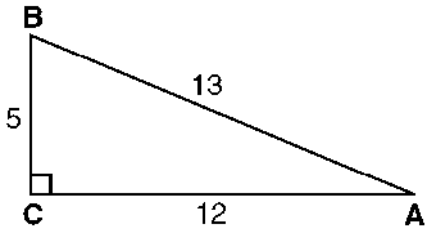
A) [2,∞)
C) (2,∞)
B) [3,∞)
D) (-∞,∞)

15) What ratio represents csc *A* in the diagram below?



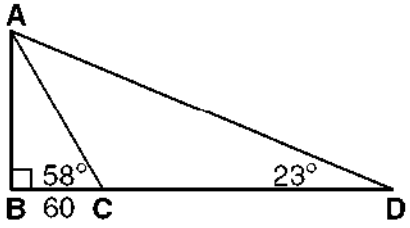
A) $\frac{7}{24}$
C) $\frac{25}{7}$
B) $\frac{24}{7}$
D) $\frac{25}{24}$

16) In the accompanying diagram of △ABC, which expression can be used to determine m∠A?



A) $\cos A = \frac{12}{5}$
C) $\sin A = \frac{12}{13}$
B) $\cos A = \frac{5}{13}$
D) $\tan A = \frac{5}{12}$

17) In the accompanying diagram of △ABD, m∠B = 90°, $\overline{BCD}$, m∠ACB = 58°, m∠D = 23°, and BC = 60 meters.



(**a**) Find, to the nearest meter, the length of $\overline{AB}$.

(**b**) Using the result from *part (a)*, find the perimeter of △ABD to the nearest meter.