1

The mean of (54,820)^2 and (54,822)^2 =

(A) (54,821)^2
(B) (54,821.5)^2
(C) (54,820.5)^2
(D) (54,821)^2 + 1
(E) (54,821)^2 - 1

2

If $f(x)=\frac{125}{x^3}$, what is the value of $f(5x)*f(\frac{x}{5})$ in terms of f(x)?

A. $(f(x))^2$

B. $f(x^2)$

C. $(f(x))^3$

D. $f(x^3)$

E. $f(125x)$

3

Given that x^4 - 25x^2 = -144, which of the following is NOT a sum of two possible values of x?

A. -7
B. -1
C. 0
D. 3
E. 7

4

If H = [(x^3) - 6(x^2) - x + 30] / (x-5)and x ≠ 5, then H is equivalent to which of the following?

A. (x^2) - x - 6
B. (x^3) + 3(x^2) + 3x
C. (x^3) - 25
D. (x^3) - 5(x^2) - 3x
E. (x^2) + x + 10

5

If x^4 + y^4 = 100, then the greatest possible value of x is between

A. 0 and 3
B. 3 and 6
C. 6 and 9
D. 9 and 12
E. 12 and 15

6

If f(x)= 5x^3- 2x+8 and g(y)= 6y-4, then g(f(x)) =

A. 11x^2+4x+4
B. 11x^2-12x+44
C. 8x^3-8x+32

D. 30x^3+4x+4
E. 30x^3-12x+44

7

If x+y=2 and x^2 - xy - 10 - 2y^2 = 0, what does x-2y =?

A. 0
B. 1
C. 2
D. 5
E. 10

8

If x, y, and k are positive numbers such that (x/(x+y))(10) + (y/(x+y))(20) = k and if x < y, which of the following could be the value of k?

A. 10
B. 12
C. 15
D. 18
E. 30