Identify the equation as a parabola, circle, ellipse, or hyperbola.

\[ 4x^2 = 16y^2 + 64 \]

a.) Ellipse  

b.) Hyperbola  

c.) Parabola  

d.) Circle  

e.) None of the above.
How many ways can a president, vice-president, and secretary be chosen from a club with 12 members? Assume that no member can hold more than one office.

a.) 220  
b.) 6  
c.) 36  
d.) 1320  
e.) None of the above.
Evaluate the sum. Round nearest integer, if necessary.

\[ \sum_{k=2}^{5} (-1)^{k+1} (k + 8)^2 \]

a.) 534  

b.) 351,788  

c.) 46  

d.) -534  

e.) None of the above.
Find the domain and range of the inverse of the given function.

\[ f(x) = \frac{1}{x + 4} \]

a.) domain: \((-\infty, -4) \cup (-4, \infty)\); Range: \((-\infty, 0) \cup (0, \infty)\)
b.) domain and Range: All Real Numbers
c.) domain: All Real Numbers; Range: \((-\infty, -4) \cup (-4, \infty)\)
d.) domain: \((-\infty, 0) \cup (0, \infty)\); Range: \((-\infty, -4) \cup (-4, \infty)\)
e.) None of the above.
Factor \( f(x) \) into linear factors given that \( k \) is a zero of \( f(x) \).

\[
f(x) = x^3 - 12x - 16; \quad k = -2 \text{ (multiplicity 2)}
\]

a.) \( f(x) = (x + 2)^2(x + 4) \)

b.) \( f(x) = (x + 2)^2(x - 4) \)

c.) \( f(x) = (x - 2)^2(x - 4) \)

d.) \( f(x) = (x + 4)(x + 2)(x - 2) \)

e.) None of the above.
Solve the problem.
How much pure acid should be mixed with 6 gallons of a 50% acid solution in order to get an 80% acid solution?

a.) 15 gallons
d.) 3 gallons

b.) 24 gallons
e.) None of the above.

c.) 9 gallons
Write an equation for the line described. Write the equation in the form specified.
parallel to $y + 8x = 4$, through $(4, 5)$; standard form

a.) $y = -8x + 37$

d.) $y = 8x - 37$

b.) $y = -8x - 37$

e.) None of the above.

c.) $y = -\frac{1}{8}x - \frac{37}{8}$