# 7-2 Tangent Lines And Critical Points

Name: _____ Time› Start: _____ Finish: _____ Total Time = _____

**Give the equation of the line tangent to the given graph at the given point. Put the equation in slope-intercept form.**

_____ 1. $f(x) = x^3 + 4x^2 - 10$ at (2, 14)

_____ 2. $f(x) = 2x^3 + 4x - 10$ at (1, -4)

_____ 3. $f(x) = x^3 + x^2$ at (2, 12)

_____ 4. $f(x) = x^5 + 4x^2 - 10x$ at (1, -5)

_____ 5. $f(x) = 4x^3 + 4x^2 - 4x$ at (-1, 4)

_____ 6. $f(x) = x^{10} + x^2 - x$ at (1, 1)

_____ 7. $f(x) = 2x^3 + 3x^2 - 4x$ at (1, 1)

**From the given information, determine if the center point is a maximum, minimum, or point of inflection.**

_____ 8. f(5.9) = 9 f(6) = 9.3 f(6.1) = 8.9

_____ 9. f(2.9) = 8.9 f(3) = 9.3 f(3.1) = 8.88

_____ 10. f(.9) = -8.45 f(1) = -8.2 f(1.1) = -8.47

_____ 11. f(3.9) = 9.9 f(4) = 9.83 f(4.1) = 9.81

_____ 12. f(-7.1) = -8.7 f(-7) = -8.87 f(-6.9) = -8.73

_____ 13. f(.9) = -8.7 f(1) = -8.78 f(1.1) = -8.83

## SAT Questions

_____ 14. At Hickam Math Camp, there are four classes with enrollments of 14, 18, 21, and 23. What is the fewest number of students that would have to change rooms for each class to contain the same number of students?

_____ 15. Using the formula $C = \frac{5}{9}(F - 32)$, if the Celsius (C) temperature increased 35°, by how many degrees would the Fahrenheit (F) temperature be increased?

A. $19\frac{4}{9}^{\circ}$ B. 31° C. 51° D. 63° E. 82°

_____ 16. In a certain school, there are *k* classes with *n* students in each class. If a total of *p* pencils are distributed equally among these students, how many pencils are there for each student?

A. $\frac{p}{kn}$ B. $\frac{kn}{p}$ C. $\frac{kp}{n}$ D. $\frac{np}{k}$ E. $npk$