	Math Summer Assignment for **Algebra II CP** *Wall Township Math Department* *Optional Summer Assignment*	

★ This summer assignment is intended to prepare you for the math course above.
★ You will find examples and video links to help you complete the practice.

Skill 1: Solving Multi-Step Linear Equations

Helpful Video Link:
➔ Solving a Multi-Step Linear Equation in One Variable

Practice: Solve each equation.

1) $-3x + 8 + 7x = -16$	2) $7(5 + k) = 0$	3) $4(8 + 2x) + 8 = 80$
4) $6m + 6 = 2m + 4m$	5) $11 + 8p = p + 4$	6) $-10 + 6 + 5x - 5 = x - 5$

Skill 2: Factoring Basic Polynomials

Helpful Video Link:
→ [Factoring](#)

Practice: Factor each completely.

1) $x^2 + 6x - 7$	2) $x^2 + 9x + 14$	3) $x^2 - 3x - 40$
4) $x^2 - 4x + 3$	5) $x^2 - 16$	6) $4x^2 - 9$

Skill 3: Simplifying Radicals

Helpful Video Link:
- ➔ Simplifying Radical Expressions
- ➔ Adding and simplifying radicals
- ➔ Multiplying & Dividing Radical Expressions

Practice: Simplify.

1) $\sqrt{96}$	2) $\frac{2}{\sqrt{3}}$	3) $3\sqrt{18} - 5\sqrt{2} - 4\sqrt{3}$
4) $\left(4\sqrt{6}\right)^2$	5) $\left(2 - \sqrt{5}\right)\left(3 + \sqrt{5}\right)$	6) $\frac{\sqrt{8}+\sqrt{10}}{\sqrt{2}}$

Skill 4: Solving Quadratics by Factoring

Helpful Video Link:

→ How To Solve Quadratic Equations By Factoring

Practice: Solve each equation by factoring.

1) $(8x + 7)(7x - 8) = 0$	2) $(x + 6)(x - 1) = 0$	3) $x^2 + 12x + 36 = 0$
4) $x^2 - 9x + 18 = 0$	5) $x^2 - 5x + 6 = 0$	6) $x^2 - 11x + 28 = 0$

Skill 5: Solving Quadratics by Square Roots

Practice: Solve each equation by taking square roots. Simplify square roots when necessary. NO DECIMALS!

1) $x^2 = 16$	2) $x^2 = 100$	3) $x^2 = 61$
4) $x^2 = 5$	5) $-10x^2 = -860$	6) $x^2 + 4 = 97$

Skill 6: Standardized Assessment Practice

★ The problems below are from different state tests. Please try each one.
★ If you have trouble, write a note or question to remind yourself where you stopped.
★ All problems should have work shown or a note/question.

1)	While Sam was at work, his house lost electrical power. By the time the electrical power came back on, the temperature inside the house was 88° F. The air conditioner immediately started to cool the house. Let $f(x)$ represent the temperature, in degrees Fahrenheit, of Sam's house x minutes after the air conditioner started to cool the house. What is the meaning of the statement $f(30) = 76$? A. After 30 minutes, the house has cooled to 76ºF. B. After 30 minutes, the house is 76ºF cooler than it was when the air conditioner started to cool the house. C. After 76 minutes, the house has cooled to 30ºF. D. After 76 minutes, the house is 30ºF cooler than it was when the air conditioner started to cool the house.
2)	(Refer to the scenario in #1) Use function notation to represent the temperature of the house when the air conditioner started to cool the house. Answer: _____
3)	Subtract $(4x^2 - x + 6)$ from $(3x^2 + 5x - 8)$. A. $7x^2 + 6x - 14$ B. $-x^2 + 4x + 2$ C. $7x^2 + 4x - 2$ D. $-x^2 + 6x - 14$
4)	The circumference C of a circle with radius r can be calculated using the formula $C = 2\pi r$. Which formula represents r in terms of C? A. $r = 2\pi C$ B. $r = C - 2\pi$ C. $r = \dfrac{C\pi}{2}$ D. $r = \dfrac{C}{2\pi}$

5) A 12-foot-long wooden beam is supported on both ends. When a weight load is placed in the center of the beam, causing it to sage. The sag is called *deflection*. The graph shows the deflection of the beam, in inches, as a function of the weight load, in pounds, placed in the center of the beam.
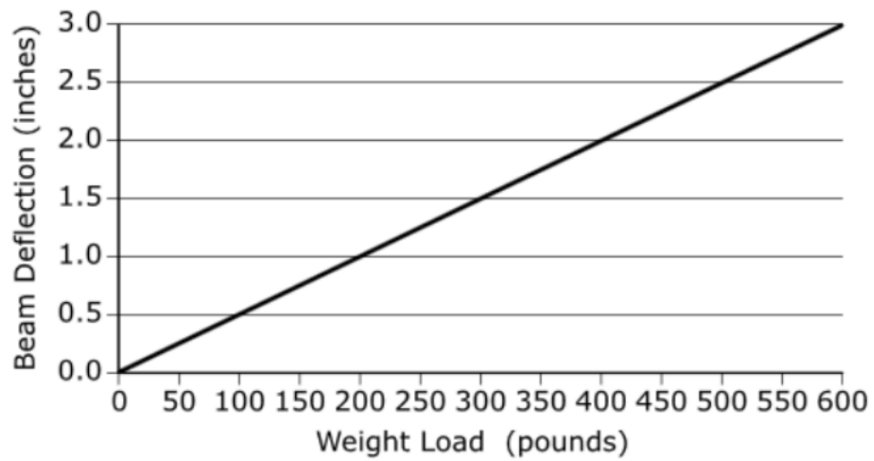
For every 50-pound increase in the weight load, what will be the change in deflection?

    A. an increase of 0.50 inch

    B. a decrease of 0.50 inch

    C. an increase of 0.25 inch

    D. a decrease of 0.25 inch