Answer The Following

1) Find the sum of following polynomials

A) $2p^2 + q^2 - 14pq - 2q$ and $-p^2 - 10q^2 + 5p^2q + 2pq - 12p + 12q - 18$

B) $5x^2y - 3xy^2 - 8x + 14y - 16$ and $12x^2 + 4y^2 - 12x^2y - 4xy + 5$

2) Find value of a from equation $(a - 5)^2 - (a + 3)^2 = -64$

Hint : Use identity $(a+b)(a-b) = a^2 - b^2$

3) If $a + b = 31$,
   $b + c = 32$ and
   $c + a = 33$
   then what is the value of $a + b + c$?

4) Deborah bought a total of 17 fans and clocks. He got a discount of \$0.90 for each fan and a discount of \$1.10 for each clock. She saved \$16.90 in total. How many clocks did she buy?

5) If $f(x) = x^2$, find the value of $\dfrac{f(x+6) - f(x)}{6}$

Fill in the blanks

6) If $y = -1$,
   $(-2y^2 - 8y - 1) - (-4y^2 + 8y - 6) = $ _____

7) Ages of Karen and Shawn are in ratio 2:7. If sum of their ages is 45 years, age of Shawn is _____ years.

Choose correct answer(s) from given choice

8) If $2x + 2 = 24$, what is the value of $2x - 2$?

   a. 23 b. 17
   c. 20 d. 27

9) Brian earns \$x daily and spends \$y per week. What is his saving for 7 weeks?

   a. $7x + 49y$ b. $49x - 7y$
   c. $7x - 49y$ d. $49x + 7y$

10) A poultry farm produced $14q^2 + 2q + 3$ eggs in a year. It packaged $2q^2 - 2q + 8$ eggs and