Operations with polynomials

1. What is the sum of
   $5b(b-6)$ and $5(b-3)$? *(no calculator)*

   A) $5b(1-5b-3)$

   B) $5b(b-5-3)$

   C) $5(b^2-5b-3)$

   D) $5(b^2-5-3b)$

2. Which of the following expressions is equivalent
   to: $(4x^3-6x)+(5x-3x^3)$? *(no calculator)*

   A) $x(x^2+1)$

   B) $x(x-1)(x+1)$

   C) $x(x-1)^2$

   D) $x(x+1)^2$

3. Which of the following expressions is equivalent
   to $(5c-7c^2+c^3)-(3c^2+8c-4c^3)$? *(no calculator)*

   A) $8c^3-c^2-3c$

   B) $5c^3-10c^2-3c$

   C) $-2c^3-10c^2-3c$

   D) $5c^3+10c^2-3c$

4. Which of the following is equivalent to
   $(9r^4+7r^2+3r)-(9r^4+7r^2+1)$? *(no calculator)*

   A) $14r^2+3r+1$

   B) $14r^2+3r$

   C) $3r-1$

   D) $3r$

5. What is the product of
   $(x-7)$ and $(x+5)$? *(no calculator)*

   A) $x^2-2x-35$

   B) x^2-2x-2

   C) $12x-2$

   D) $-2x-35$

6. $-(x-3)(x-5)$

   Which of the following expressions is equivalent
   to the above expression? *(no calculator)*

   A) $x^2-8x-15$

   B) $x^2-8x+15$

   C) $-x^2-8x+15$

   D) $-x^2+8x-15$

7. $(5y+9y^2+4)-4(2y^2+y+1)$

   Which of the following is equivalent to the
   above expression? *(no calculator)*

   A) y^2-y+8

   B) $17y^2+9y+8$

   C) y^2+y

   D) y^2-y

8. If $f(x)=3x-4$ and $g(x)=5x-3$, then which
   of the following is equivalent to $f(x)\times g(x)$?
   (no calculator)

   A) $15x-13$

   B) $15x-23$

   C) $15x^2-29x+12$

   D) $15x^2+29x-12$

9. $(5v+3)-\left(\frac{1}{2}v-\frac{1}{3}\right)$

   Which of the following is equivalent to the
   above expression? *(no calculator)*

   A) $\frac{9}{2}v+\frac{8}{3}$

   B) $\frac{9}{2}v+\frac{10}{3}$

   C) $2.5v^2-1$

   D) $-2.5v^2+1$

10. $f(x) = 9 - \dfrac{x}{3}$ and $g(x) = \dfrac{4}{5} - \dfrac{x}{15}$

    Which of the following is equivalent to

    $f(x) - 5g(x)$? *(no calculator)*

    A) 5

    B) −5

    C) $5 - \dfrac{2x}{3}$

    D) $-5 - \dfrac{2x}{3}$