Name : _____

Function Operations

A) 1) If $f(x) = 7x + 5$ and $g(x) = 2x^2 - 5$, find $f(x) + g(x)$.

   2) If $f(x) = 6x^2 + 3$ and $g(x) = 4$, find $(g - f)(x)$.

_____   _____

B) If $f(x) = -3x^2 + 13$ and $g(x) = x^3 + 8x^2 - 2$; find the following.
   i) $(g + f)(x)$ ii) $f(x) - g(x)$

_____   _____

C) 1) If $f(x) = -9$ and $g(x) = -10 + x$, find $(g - f)(-7)$.

   2) If $f(x) = -2x - 14$ and $g(x) = 5x + x^2$, find $f(6) + g(6)$.

_____   _____

D) If $f(x) = -4x + 15$ and $g(x) = 7x^3$; find the following.
   i) $g(-3) + f(-3)$ ii) $(f - g)(2)$

_____   _____

E) 1) Which of the following represents $(g + f)(10)$, if $f(x) = x^2 + 1$ and $g(x) = -x^2 - 9x$?

   i) 89   ii) −89   iii) −91   iv) 91

   2) Which of the following represents $f(x) - g(x)$, if $f(x) = -11 + x$ and $g(x) = 8x^2 + 3x - 12$?

   i) $-8x^2 - 2x + 23$ ii) $8x^2 + 4x - 1$ iii) $8x^2 + 4x - 23$ iv) $-8x^2 - 2x + 1$

Name : _____

Function Operations

A) 1) If $f(x) = 2x - 6$ and $g(x) = x^2 - 5x + 6$, find $\dfrac{f(x)}{g(x)}$.

2) If $f(x) = -7x + 2$ and $g(x) = x^3 + x^2$, find $(g \cdot f)(x)$.

_____   _____

B) If $f(x) = 4x - 8$ and $g(x) = -x^2 + 6x - 8$; find the following.

i) $f(x) \cdot g(x)$

ii) $\left(\dfrac{g}{f}\right)(x)$

_____   _____

C) 1) If $f(x) = 10x + 3$ and $g(x) = x + 15$, find $\left(\dfrac{f}{g}\right)(6)$.

2) If $f(x) = -3x - 9$ and $g(x) = 5x^2 + 1$, find $g(-3) \cdot f(-3)$.

_____   _____

D) If $f(x) = 5 - x$ and $g(x) = 12 + 7x^2$; find the following.

i) $(f \cdot g)(-2)$

ii) $\dfrac{g(4)}{f(4)}$

_____   _____

E) 1) Which of the following represents $\left(\dfrac{f}{g}\right)(x)$, if $f(x) = -9x^3$ and $g(x) = -3x^2$?

i) 3   ii) x iii) $2x$ iv) $3x$

2) Which of the following represents $(g \cdot f)(5)$, if $f(x) = -13 - x^2$ and $g(x) = -14$?

i) 168   ii) 532   iii) 494   iv) 196

Function Operations

A) 1) If $f(x) = 7x + 5$ and $g(x) = 2x^2 - 5$, find $f(x) + g(x)$.

2) If $f(x) = 6x^2 + 3$ and $g(x) = 4$, find $(g - f)(x)$.

$$2x^2 + 7x$$

$$-6x^2 + 1$$

B) If $f(x) = -3x^2 + 13$ and $g(x) = x^3 + 8x^2 - 2$; find the following.

i) $(g + f)(x)$

ii) $f(x) - g(x)$

$$x^3 + 5x^2 + 11$$

$$-x^3 - 11x^2 + 15$$

C) 1) If $f(x) = -9$ and $g(x) = -10 + x$, find $(g - f)(-7)$.

2) If $f(x) = -2x - 14$ and $g(x) = 5x + x^2$, find $f(6) + g(6)$.

$$-8$$

$$40$$

D) If $f(x) = -4x + 15$ and $g(x) = 7x^3$; find the following.

i) $g(-3) + f(-3)$

ii) $(f - g)(2)$

$$-162$$

$$-49$$

E) 1) Which of the following represents $(g + f)(10)$, if $f(x) = x^2 + 1$ and $g(x) = -x^2 - 9x$?

i) 89   ii) ✓ -89 iii) -91 iv) 91

2) Which of the following represents $f(x) - g(x)$, if $f(x) = -11 + x$ and $g(x) = 8x^2 + 3x - 12$?

i) $-8x^2 - 2x + 23$ ii) $8x^2 + 4x - 1$ iii) $8x^2 + 4x - 23$ iv) ✓ $-8x^2 - 2x + 1$

Answer key

Function Operations

A) 1) If $f(x) = 2x - 6$ and $g(x) = x^2 - 5x + 6$, find $\dfrac{f(x)}{g(x)}$.

$$\dfrac{2}{x - 2}$$

2) If $f(x) = -7x + 2$ and $g(x) = x^3 + x^2$, find $(g \cdot f)(x)$.

$$-7x^4 - 5x^3 + 2x^2$$

B) If $f(x) = 4x - 8$ and $g(x) = -x^2 + 6x - 8$; find the following.

i) $f(x) \cdot g(x)$

$$-4x^3 + 32x^2 - 80x + 64$$

ii) $\left(\dfrac{g}{f}\right)(x)$

$$\dfrac{-x + 4}{4}$$

C) 1) If $f(x) = 10x + 3$ and $g(x) = x + 15$, find $\left(\dfrac{f}{g}\right)(6)$.

$$3$$

2) If $f(x) = -3x - 9$ and $g(x) = 5x^2 + 1$, find $g(-3) \cdot f(-3)$.

$$0$$

D) If $f(x) = 5 - x$ and $g(x) = 12 + 7x^2$; find the following.

i) $(f \cdot g)(-2)$

$$280$$

ii) $\dfrac{g(4)}{f(4)}$

$$124$$

E) 1) Which of the following represents $\left(\dfrac{f}{g}\right)(x)$, if $f(x) = -9x^3$ and $g(x) = -3x^2$?

i) 3   ii) x iii) $2x$ iv) ✓ $3x$

2) Which of the following represents $(g \cdot f)(5)$, if $f(x) = -13 - x^2$ and $g(x) = -14$?

i) 168   ii) ✓ 532   iii) 494   iv) 196