Outcome 1 – Evaluating functions

Bronze examples

Examples... Sub in or set equal???

A function is given as $f(x) = 6x - 1$

Find $f(3)$. **Replace x with 3!**

$f(3) = 6(3) - 1 = 18 - 1 = 17$

A function is defined as $g(a) = a^2 + 3a$

Find $g(2)$. **Replace a with 2!**

$g(2) = (2)^2 + 3(2) = 4 + 6 = 10$

Silver examples

Examples... Sub in or set equal???

A function is given as $f(x) = 6x - 7$

Find $f(\frac{1}{2})$. **Replace x with $\frac{1}{2}$!**

$f\left(\frac{1}{2}\right) = 6\left(\frac{1}{2}\right) - 7 = 3 - 7 = -4$

A function is defined as $g(a) = a^2 + 9a$

Find $g(-2)$. ** Replace a with -2!**

$g(-2) = (-2)^2 + 9(-2) = 4 - 18 = -14$

Gold example

Examples... Sub in or set equal???

A function is defined as $g(a) = a^2 + 2a$

Find $g(x + 4)$. ** Replace a with (x + 4)! **

$g(x + 4) = (x + 4)^2 + 2(x + 4)$ ** Multiply out brackets and simplify **

$= x^2 + 8x + 16 + 2x + 8$

$= x^2 + 10x + 24$

Tip for squaring brackets...

1. Square the first
2. Times and double
3. Square the last

Bronze Questions

A function is given as $f(x) = 4x + 3$.

Find :

1. $f(0)$ 2. $f(4)$ 3. $f(12)$

A function is given as $g(a) = 3a^2 - 1$.

Find :

4. $g(1)$ 5. $g(6)$ 6. $g(10)$

A function is defined as $h(t) = t^2 + 7t$.

Find :

7. $h(0)$ 8. $h(3)$ 9. $h(11)$

Silver Questions

A function is given as $f(x) = 18x + 5$.

Find :

1. $f\left(\frac{1}{2}\right)$ 2. $f\left(\frac{1}{6}\right)$ 3. $f(-3)$

A function is given as $g(a) = 9a^2 - 2$.

Find :

4. $g\left(\frac{1}{3}\right)$ 5. $g(-1)$ 6. $g(-4)$

A function is defined as $h(t) = t^2 + 4t$.

Find :

7. $h\left(\frac{1}{2}\right)$ 8. $h(-4)$ 9. $h(-20)$

Gold Questions

A function is given as $f(x) = 2x + 3$.

Find :

1. $f(3p)$ 2. $f(m + 5)$ 3. $f(4h - 1)$

A function is given as $g(a) = a^2 - 4$.

Find :

4. $g(5n)$ 5. $g(s - 3)$ 6. $g(3d + 2)$

A function is defined as $h(t) = t^2 + 8t$.

Find :

7. $h(7b)$ 8. $h(z + 1)$ 9. $h(5v - 9)$

Bronze Answers

1. $f(0) = 3$ 2. $f(4) = 19$ 3. $f(12) = 51$

4. $g(1) = 2$ 5. $g(6) = 107$ 6. $g(10) = 299$

7. $h(0) = 0$ 8. $h(3) = 30$ 9. $h(11) = 198$

Silver Answers

1. $f(1/2) = 14$ 2. $f(1/6) = 8$ 3. $f(-3) = -49$

4. $g(1/3) = -1$ 5. $g(-1) = 7$ 6. $g(-4) = 142$

7. $h(1/2) = 9/4$ 8. $h(-4) = 0$ 9. $h(-20) = 320$

Gold Answers

1. $6p + 3$ 2. $2m + 13$ 3. $8h + 1$

4. $25n^2 - 4$ 5. $s^2 - 6s + 5$ 6. $9d^2 + 12d$

7. $49b^2 + 56b$ 8. $z^2 + 10z + 9$ 9. $25v^2 - 50v + 9$