Question 1

$$\mathrm{f}(x) = \frac{-11}{x^2},\ \mathrm{g}(x) = -3\,x$$

(a) Find $\mathrm{g}(-3)$

(b) Find $\mathrm{fg}(-10)$

Question 2

Find the $n$th term of this quadratic sequence:
$16,\ 8,\ -2,\ -14,\ -28, \ldots$

Question 1

$f(x) = \frac{-11}{x^2}$, $g(x) = -3x$

(a) Find $g(-3)$

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(b) Find $fg(-10)$

$-\frac{11}{900}$

Question 2

Find the $n$th term of this quadratic sequence:
$16,\ 8,\ -2,\ -14,\ -28, \ldots$

The first differences are: $-8,\ -10,\ -12,\ -14$
The second differences are: $-2$, which means the sequence has $n$th term $-n^2 + bn + c$

So $-n^2 + bn + c$ : $16,\ 8,\ -2,\ -14,\ -28, \ldots$
And $-n^2$ : $-1,\ -4,\ -9,\ -16,\ -25, \ldots$

i.e. $bn + c$ : $17,\ 12,\ 7,\ 2,\ -3, ..$

so $b = -5$ and $c = 22$

So the $n$th term of the quadratic sequence is $-n^2 - 5n + 22$