

Given $f(x) = -x^2 - 3$ and $g(x) = 4x + 5$, find:

1. $(f \circ g)(x)$

2. $(f + g)(x)$

3. $(g \circ f)(x)$

4. $(f \circ g)(-3)$

5. $f^{-1}(x)$

6. $g^{-1}(x)$

7. If $f(x) = \frac{x^2 + 3}{x - 2}$, find $f(i)$ where $i = \sqrt{-1}$.

8. List the possible rational zeros of $P(x) = 15x^3 + 12x^2 - 3x - 8$.

9. Write the equation of a polynomial that has roots that include 5 and $3 + i$.

Use the triangle to find the following:

10. c

11. $\sin A$

12. $\tan B$

13. $\cos A$

14. $\cot A$

15. $\csc B$

