

## Composition functions

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$$f(x) = \sqrt{x-7} \quad g(x) = x^2 - 4x - 5$$

$$f \circ g(x) = \sqrt{(x^2 - 4x - 5) - 7} = \sqrt{x^2 - 4x - 12} = \boxed{\sqrt{x^2 - 4x - 12}}$$

$$g \circ f(x) = (\sqrt{x-7})^2 - 4(\sqrt{x-7}) - 5 = x - 7 - 4\sqrt{x-7} - 5 = \boxed{x - 4\sqrt{x-7} - 12}$$

Expressing a function as the composition of two functions

$$h(x) = (2x+1)^5 + 3(2x+1) - 7$$

$$h(x) = g(f(x)) \quad g(x) = x^5 + 3x - 7$$

$$f(x) = 2x + 1$$

Formulas For kelvin, Celcius, Farenheit

$$T(C) = \frac{9}{5}C + 32$$

Celcius  $\rightarrow$  F

$$D(K) = K - 273$$

kelvin  $\rightarrow$  C

$$T(DK) = \frac{9}{5}(K - 273) + 32$$

$$= \frac{9}{5}K - \frac{9}{5}(273) + 32$$

kelvin  $\rightarrow$  F