Samples **Range and domain SOLUTIONS**

1. $f(x) = \left(\sqrt{6x}\right)^2$

When determining the domain of this function, we need to keep in mind the following:

- we can square any number;
- we can only take the square root of positive numbers or 0, so $6x \geq 0$.

Hence, the domain of this function is $[0, \infty)$, i.e. $x \geq 0$.

2. $f(z) = \dfrac{2}{-7\sqrt{z}}$

When determining the domain of this function, we need to keep in mind the following:

- denominator of a fraction cannot be 0, so $-7\sqrt{z} \neq 0$;
- we can only take the square root of positive numbers or 0, so $z > 0$.

Hence, the domain of this function is $(0, \infty)$, i.e. $z > 0$.

3. $f(x) = 4\sqrt{\dfrac{4}{x}}$

When determining the domain of this function, we need to keep in mind the following:

- we can only take the square root of positive numbers or 0, so $\dfrac{4}{x} \geq 0$;
- denominator of a fraction cannot be 0, so $x > 0$.

Hence, the domain of this function is $(0, \infty)$, i.e. $x > 0$.