

# 2021 Worksheet 1

## Year 11 Applied Mathematics

1. For which value of  $x$  is  $\frac{1}{x-4}$  **undefined**?
2. Make  $a$  the **subject** of the formula  $v^2 = u^2 + 2ad$
3. The **cash price** of a refrigerator is \$1500. To buy this refrigerator on hire purchase, a 5% deposit is required, then 24 monthly payments of \$80.

How much more than the cash price will be paid if the refrigerator is bought on **hire purchase**?

4. The table given below shows the set  $\{p, q, r, s\}$  under the operation  $\otimes$ . Use the table to answer parts (a) – (d).

$\otimes$	p	q	r	s
p	q	p	s	r
q	p	q	r	s
r	s	r	q	p
s	r	s	p	q

- a) Is the set **closed** under  $\otimes$ ? Give a reason for your answer.
- b) What is the **identity element**?
- c) What is the **inverse** of p?
- d) Simplify  $s \otimes (p \otimes r)$