Math Studies Bonus Problems

1. A plumber in Australia charges 90 AUD per hour for work, plus a fixed cost. His total charge is represented by the cost function *C* =60 + 90*t*, where *t* is in hours.

(a) Write down the fixed cost.

(1)

(b) It takes  hours to complete a job for Paula. Find the total cost.

(2)

(c) Steve received a bill for 510 AUD. Calculate the time it took the plumber to complete the job.

2. (a) *f* : *x*  3*x* − 5 is a mapping from the set *S* to the set *T* as shown below.



Find the values of *p* and *q*.

(2)

(b) A function g is such that *g* (*x*) = .

(i) State the domain of the function *g*(*x*).