

$1 \in \text{Domain}$

1 is an element of the Domain

2 is an element of the range

$\{(1, 5), (3, 6), (4, 9), (1, 5)\}$

is a function because 1 (and the rest of the elements of the domain) is only assigned to 1 element of the range, namely 5.

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

f of x equals x squared plus 1

$$f(-3) = (-3)^2 + 1 = 10$$

$$(-3, 10) \in f$$

↓
is an element of
belongs to

$$y = \frac{1}{x-3}; (x \neq 3)$$

Domain:

$$(-\infty, 3) \cup (3, \infty)$$



Q. 6 # 8. $f(x) = \frac{6}{x-4}$

$$x-4 \neq 0$$

$$x \neq 4$$

$$(-\infty, 4) \cup (4, \infty)$$

\cup union
OR

$$\{x \mid -\infty < x < 4\} \cup \{x \mid x > 4\}$$

$$4 < x < \infty$$

set builder
notation

$$\{x \mid x < 4\} \cup \{x \mid x > 4\}$$

$x \geq 0$ $[0, \infty)$ notation

$$\sqrt{-1} = \begin{matrix} i \\ j \end{matrix} \text{ imaginary}$$

$$6. f(x) = \sqrt{25 - x^2}$$

$$25 - x^2 \geq 0$$

$$+x^2 \quad +x^2$$

$$25 \geq x^2$$

X is bigger than or equal to -5 but less than or equal to 5.

$$x^2 \leq 25$$

$$[-5, 5]$$

$$\begin{aligned} (-6)^2 &= 36 \\ (6)^2 &= 36 \end{aligned}$$

like #1

example 2 p.4

page 3. Need formulas 4 + 5 on

let $P=1$ $t=1$

daily formula 4

compounded amount

$$A = 1 \left(1 + \frac{.0505}{365} \right)^{365.1}$$

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1(1+.0505/365)^365
1.051793189
```

$$A = 1.051793189$$

4.949%

$$A = P e^{rt}$$

$$P = 1$$

$$.04949$$

$$t = 1$$

$$A = 1.050735085$$

Euler

```
(1+1/1000000)^10
00000
2.718280469
e^(1)
2.718281828
e^(.04949)
1.050735085
```

$$A = 1.050735085$$

compounded daily gives us
more interest and is the better
deal.

Euler said let's compound

\$1 at 100% = 1.00

let n start 1, then 10, 100,

n 1000, 1000,000,
etc.

$$A = \left(1 + \frac{1}{n}\right)^n$$

```
(1+1/1000000)^1000000
2.718280469
e^(1)
2.718281828
```

$e = \lim_{n \rightarrow \infty} \left(1 + \frac{1}{n}\right)^n$
as n approaches infinity

$$\left(1 + \frac{1}{n}\right)^n = 2.718281828$$

ln ()
button

2nd ln

gives e^n