



Use the factor theorem

1

Find the remainder when $f(x)$ is divided by $(x - 1)$.

$$f(x) = x^4 - x^3 - 7x^2 + 13x - 6$$

A

0

B

1

C

-6

D

-24

2

Is $(x - 1)$ a factor of $f(x)$?

$$f(x) = x^3 - 2x^2 + x$$

A

No

B

Yes

3

Which calculation determines whether $(x - 2)$ is a factor of $f(x)$?

$$f(x) = x^4 + 6x^3 + 9x^2 - 4x - 12$$

A

 $f(0) = 2$

B

 $f(-2) = 0$

C

 $f(2) = 0$

D

 $f(0) = -2$ **4**

Given that $(x - 3)$ is a factor of $f(x)$, find the value of a .

$$f(x) = x^3 + 2x^2 - 9x + a$$

A

-17

B

18

C

-19

D

-18

5

Given $f(-2) = -75$, find the value of a .

$$f(x) = x^3 - 7x^2 + ax - 9$$

A

14

B

-15

C

16

D

15

6

Is $(x - 0)$ a factor of $f(x)$?

$$f(x) = x^4 - x^3 - 15x^2 + 9x + 54$$

A

No

B

Yes

7

Which calculation determines whether $(x - 2)$ is a factor of $f(x)$?

$$f(x) = x^4 - 7x^2 - 6x$$

A

 $f(0) = -2$

B

 $f(-2) = 0$

C

 $f(2) = 0$

D

 $f(0) = 2$ **8**

Given that $(x - 1)$ is a factor of $f(x)$, find the value of a .

$$f(x) = x^3 + 4x^2 + x + a$$

A

-6

B

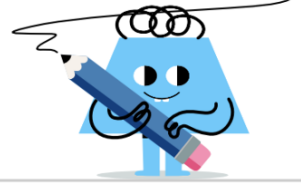
-5

C

-7

D

6



Use the factor theorem

9Given $f(1) = 8$, find the value of a .

$$f(x) = x^3 - 2x^2 - 9x + a$$

A

-18

B

18

C

19

D

17

10Is $(x + 1)$ a factor of $f(x)$?

$$f(x) = x^5 + 9x^4 + 30x^3 + 46x^2 + 33x + 9$$

A

No

B

Yes

11Which calculation determines whether $(x + 1)$ is a factor of $f(x)$?

$$f(x) = x^5 - 2x^4 - 13x^3 + 26x^2 + 36x - 72$$

A

 $f(1) = 0$

B

 $f(-1) = 0$

C

 $f(0) = -1$

D

 $f(0) = 1$ **12**Given that $(x + 3)$ is a factor of $f(x)$, find the value of a .

$$f(x) = x^3 + ax^2 - 9x + 9$$

A

-2

B

1

C

-1

D

0