

1 When $p(x) = x^4 - 2x^3 - 3x^2 + 8x - 4$ is divided by which factor is the remainder the greatest?

- a. $(x-1)$ b. $(x+1)$ c. $(x-2)$ d. $(x-3)$

CODE:

ANSWER:

1 When $p(x) = x^4 - 2x^3 - 3x^2 + 8x - 4$ is divided by which factor is the remainder the greatest?

- a. $(x-1)$ b. $(x+1)$ c. $(x-2)$ d. $(x-3)$

CODE:

ANSWER:

1 When $p(x) = x^4 - 2x^3 - 3x^2 + 8x - 4$ is divided by which factor is the remainder the greatest?

- a. $(x-1)$ b. $(x+1)$ c. $(x-2)$ d. $(x-3)$

CODE:

ANSWER:

1 When $p(x) = x^4 - 2x^3 - 3x^2 + 8x - 4$ is divided by which factor is the remainder the greatest?

- a. $(x-1)$ b. $(x+1)$ c. $(x-2)$ d. $(x-3)$

CODE:

ANSWER:

2 Solve for x : $9x + 4 = 8^{1+\log_8 5}$

ANSWER:

2 Solve for x : $9x + 4 = 8^{1+\log_8 5}$

CODE:

ANSWER:

2 Solve for x : $9x + 4 = 8^{1+\log_8 5}$

CODE:

CODE:

ANSWER:

2 Solve for x : $9x + 4 = 8^{1+\log_8 5}$

CODE:
ANSWER:

3 As a cannonball travels through the air, its height in meters above the ground at t seconds is $h(t) = -9.8(t-10)^2 + 980$.

For what time does this equation have physical meaning? Express answer in interval notation.

CODE:

ANSWER:

3 As a cannonball travels through the air, its height in meters above the ground at t seconds is $h(t) = -9.8(t-10)^2 + 980$.

For what time does this equation have physical meaning? Express answer in interval notation.

CODE:

ANSWER:

3 As a cannonball travels through the air, its height in meters above the ground at t seconds is $h(t) = -9.8(t-10)^2 + 980$.

For what time does this equation have physical meaning? Express answer in interval notation.

CODE:

ANSWER:

3 As a cannonball travels through the air, its height in meters above the ground at t seconds is $h(t) = -9.8(t-10)^2 + 980$.

For what time does this equation have physical meaning? Express answer in interval notation.

CODE:

ANSWER:

4 Find $f''(-4)$ if

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

4 Find $f''(-4)$ if

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

CODE:

ANSWER:

CODE:

ANSWER:

4 Find $f''(-4)$ if

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

4 Find $f''(-4)$ if

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

CODE:

ANSWER:

CODE:

ANSWER:

5 Find the limit, if it exists.

$$\lim_{x \rightarrow -6} \frac{x^2 - 36}{x^2 + x - 30}$$

CODE:

ANSWER:

5 Find the limit, if it exists.

$$\lim_{x \rightarrow -6} \frac{x^2 - 36}{x^2 + x - 30}$$

CODE:

ANSWER:

5 Find the limit, if it exists.

$$\lim_{x \rightarrow -6} \frac{x^2 - 36}{x^2 + x - 30}$$

CODE:

ANSWER:

5 Find the limit, if it exists.

$$\lim_{x \rightarrow -6} \frac{x^2 - 36}{x^2 + x - 30}$$

CODE:

ANSWER:

6 A point is moving along the graph of $y = \frac{1}{1+x^2}$ so that $\frac{dx}{dt} = 2$ cm/min. Find $\frac{dy}{dt}$ when $x = -2$.

CODE:

ANSWER:

6 A point is moving along the graph of $y = \frac{1}{1+x^2}$ so that $\frac{dx}{dt} = 2$ cm/min. Find $\frac{dy}{dt}$ when $x = -2$.

CODE:

ANSWER:

6 A point is moving along the graph of $y = \frac{1}{1+x^2}$ so that $\frac{dx}{dt} = 2$ cm/min. Find $\frac{dy}{dt}$ when $x = -2$.

CODE:

ANSWER:

6 A point is moving along the graph of $y = \frac{1}{1+x^2}$ so that $\frac{dx}{dt} = 2$ cm/min. Find $\frac{dy}{dt}$ when $x = -2$.

CODE:

ANSWER:

7 How many terms are in the sequence
3, 7, 11, ... , 39 ?

7 How many terms are in the sequence
3, 7, 11, ... , 39 ?

CODE:
ANSWER:

CODE:
ANSWER:

7 How many terms are in the sequence
3, 7, 11, ... , 39 ?

7 How many terms are in the sequence
3, 7, 11, ... , 39 ?

CODE:
ANSWER:

CODE:
ANSWER:

8 Solve for x :

$$(2^{8x^2})(2^{4x})(2^{-2}) = (2^{2x^2})(2^{5x})$$

CODE:

ANSWER:

8 Solve for x :

$$(2^{8x^2})(2^{4x})(2^{-2}) = (2^{2x^2})(2^{5x})$$

CODE:

ANSWER:

8 Solve for x :

$$(2^{8x^2})(2^{4x})(2^{-2}) = (2^{2x^2})(2^{5x})$$

CODE:

ANSWER:

8 Solve for x :

$$(2^{8x^2})(2^{4x})(2^{-2}) = (2^{2x^2})(2^{5x})$$

CODE:

ANSWER:

9 Solve for x:

$$\begin{vmatrix} 4 & x^2 & x \\ 3 & 1 & 0 \\ -1 & -2 & 3 \end{vmatrix} = 8$$

CODE:

ANSWER:

9 Solve for x:

$$\begin{vmatrix} 4 & x^2 & x \\ 3 & 1 & 0 \\ -1 & -2 & 3 \end{vmatrix} = 8$$

CODE:

ANSWER:

9 Solve for x:

$$\begin{vmatrix} 4 & x^2 & x \\ 3 & 1 & 0 \\ -1 & -2 & 3 \end{vmatrix} = 8$$

CODE:

ANSWER:

9 Solve for x:

$$\begin{vmatrix} 4 & x^2 & x \\ 3 & 1 & 0 \\ -1 & -2 & 3 \end{vmatrix} = 8$$

CODE:

ANSWER:

10 Find $\lim_{x \rightarrow \infty} \left(\frac{1}{x} + \frac{1}{x^2} + 1 \right)$

CODE:
ANSWER:

10 Find $\lim_{x \rightarrow \infty} \left(\frac{1}{x} + \frac{1}{x^2} + 1 \right)$

CODE:
ANSWER:

10 Find $\lim_{x \rightarrow \infty} \left(\frac{1}{x} + \frac{1}{x^2} + 1 \right)$

CODE:
ANSWER:

10 Find $\lim_{x \rightarrow \infty} \left(\frac{1}{x} + \frac{1}{x^2} + 1 \right)$

CODE:
ANSWER:

11 Find $f'(x)$ if
 $f(x) = 3 \cos^2 5x$

11 Find $f'(x)$ if
 $f(x) = 3 \cos^2 5x$

CODE:
ANSWER:

CODE:
ANSWER:

11 Find $f'(x)$ if
 $f(x) = 3 \cos^2 5x$

11 Find $f'(x)$ if
 $f(x) = 3 \cos^2 5x$

CODE:
ANSWER:

CODE:
ANSWER:

12 If the coefficient of the 5th and 6th terms in the expansion of $(x - y)^n$ are equal, find the 3rd term.

CODE:
ANSWER:

12 If the coefficient of the 5th and 6th terms in the expansion of $(x - y)^n$ are equal, find the 3rd term.

CODE:
ANSWER:

12 If the coefficient of the 5th and 6th terms in the expansion of $(x - y)^n$ are equal, find the 3rd term.

CODE:
ANSWER:

12 If the coefficient of the 5th and 6th terms in the expansion of $(x - y)^n$ are equal, find the 3rd term.

CODE:
ANSWER:

13 Find the dot product given
 $\vec{v} = -3i + 4j - 7k$ and
 $\vec{w} = 3i - 6j - 3k$.

13 Find the dot product given
 $\vec{v} = -3i + 4j - 7k$ and
 $\vec{w} = 3i - 6j - 3k$.

CODE:
ANSWER:

CODE:
ANSWER:

13 Find the dot product given
 $\vec{v} = -3i + 4j - 7k$ and
 $\vec{w} = 3i - 6j - 3k$.

13 Find the dot product given
 $\vec{v} = -3i + 4j - 7k$ and
 $\vec{w} = 3i - 6j - 3k$.

CODE:
ANSWER:

CODE:
ANSWER:

14 Simplify:

$$\frac{q!(q-3)!}{(q-5)!(q+2)!}$$

CODE:

ANSWER:

14 Simplify:

$$\frac{q!(q-3)!}{(q-5)!(q+2)!}$$

CODE:

ANSWER:

14 Simplify:

$$\frac{q!(q-3)!}{(q-5)!(q+2)!}$$

CODE:

ANSWER:

14 Simplify:

$$\frac{q!(q-3)!}{(q-5)!(q+2)!}$$

CODE:

ANSWER:

15 Find the mean of the first *500,000* odd numbers.

15 Find the mean of the first *500,000* odd numbers.

CODE:
ANSWER:

CODE:
ANSWER:

15 Find the mean of the first *500,000* odd numbers.

15 Find the mean of the first *500,000* odd numbers.

CODE:
ANSWER:

CODE:
a) ANSWER:

16 The height, h in meters, of a projectile launched from under water is given by the portion of the curve of $h(t) = -t^5 - 2t^4 + 10t^3 + 20t^2 - 9t - 18$ where $t \geq 0$, t is in seconds. At what time does the projectile leave the water?

CODE:
ANSWER:

16 The height, h in meters, of a projectile launched from under water is given by the portion of the curve of $h(t) = -t^5 - 2t^4 + 10t^3 + 20t^2 - 9t - 18$ where $t \geq 0$, t is in seconds. At what time does the projectile leave the water?

CODE:
ANSWER:

16 The height, h in meters, of a projectile launched from under water is given by the portion of the curve of $h(t) = -t^5 - 2t^4 + 10t^3 + 20t^2 - 9t - 18$ where $t \geq 0$, t is in seconds. At what time does the projectile leave the water?

CODE:
ANSWER:

16 The height, h in meters, of a projectile launched from under water is given by the portion of the curve of $h(t) = -t^5 - 2t^4 + 10t^3 + 20t^2 - 9t - 18$ where $t \geq 0$, t is in seconds. At what time does the projectile leave the water?

CODE:
ANSWER:

17 Solve and express the answer in interval notation:

$$(x+4)^2(x-1)^2(x+7)^2 > 0$$

CODE:

ANSWER:

17 Solve and express the answer in interval notation:

$$(x+4)^2(x-1)^2(x+7)^2 > 0$$

CODE:

ANSWER:

17 Solve and express the answer in interval notation:

$$(x+4)^2(x-1)^2(x+7)^2 > 0$$

CODE:

ANSWER:

17 Solve and express the answer in interval notation:

$$(x+4)^2(x-1)^2(x+7)^2 > 0$$

CODE:

ANSWER:

18 If

$$f(x) = -8(x-1)^3(x+2)(x-3)^7(x+1)^4$$

at which x intercept does the function just touch the x -axis?

CODE:

ANSWER:

18 If

$$f(x) = -8(x-1)^3(x+2)(x-3)^7(x+1)^4$$

at which x intercept does the function just touch the x -axis?

CODE:

ANSWER:

18 If

$$f(x) = -8(x-1)^3(x+2)(x-3)^7(x+1)^4$$

at which x intercept does the function just touch the x -axis?

CODE:

ANSWER:

18 If

$$f(x) = -8(x-1)^3(x+2)(x-3)^7(x+1)^4$$

at which x intercept does the function just touch the x -axis?

CODE:

ANSWER:

19 Which of the functions are even?

- I. $y = 3x^2$
- II. $y = 5x^4 - 4$
- III. $y = 4x^2 + 8x + 4$
- IV. $y = x^4 + 3x^2 + 7$
- V. $y = \cos 5x$

CODE:

ANSWER:

19 Which of the functions are even?

- I. $y = 3x^2$
- II. $y = 5x^4 - 4$
- III. $y = 4x^2 + 8x + 4$
- IV. $y = x^4 + 3x^2 + 7$
- V. $y = \cos 5x$

CODE:

ANSWER:

19 Which of the functions are even?

- I. $y = 3x^2$
- II. $y = 5x^4 - 4$
- III. $y = 4x^2 + 8x + 4$
- IV. $y = x^4 + 3x^2 + 7$
- V. $y = \cos 5x$

CODE:

ANSWER:

19 Which of the functions are even?

- I. $y = 3x^2$
- II. $y = 5x^4 - 4$
- III. $y = 4x^2 + 8x + 4$
- IV. $y = x^4 + 3x^2 + 7$
- V. $y = \cos 5x$

CODE:

ANSWER:

20 State the domain for $f(x)$ in interval form if $f(x) = \sqrt{4-x^2}$

20 State the domain for $f(x)$ in interval form if $f(x) = \sqrt{4-x^2}$

CODE:
ANSWER:

CODE:
ANSWER:

20 State the domain for $f(x)$ in interval form if $f(x) = \sqrt{4-x^2}$

20 State the domain for $f(x)$ in interval form if $f(x) = \sqrt{4-x^2}$

CODE:
ANSWER:

CODE:
ANSWER:

21 What test would be used to prove convergence of the series $\sum_{n=1}^{\infty} \frac{1}{n^5}$

CODE:
ANSWER:

21 What test would be used to prove convergence of the series $\sum_{n=1}^{\infty} \frac{1}{n^5}$

CODE:
ANSWER:

21 What test would be used to prove convergence of the series $\sum_{n=1}^{\infty} \frac{1}{n^5}$

CODE:
ANSWER:

21 What test would be used to prove convergence of the series $\sum_{n=1}^{\infty} \frac{1}{n^5}$

CODE:
ANSWER:

22 A particle is moving along a horizontal line according to the equation $s(t) = 2t^3 - 4t^2 + 2t - 1$. Find the velocity at the instant $t = 3$ seconds.

22 A particle is moving along a horizontal line according to the equation $s(t) = 2t^3 - 4t^2 + 2t - 1$. Find the velocity at the instant $t = 3$ seconds.

CODE:
ANSWER:

CODE:
ANSWER:

22 A particle is moving along a horizontal line according to the equation $s(t) = 2t^3 - 4t^2 + 2t - 1$. Find the velocity at the instant $t = 3$ seconds.

22 A particle is moving along a horizontal line according to the equation $s(t) = 2t^3 - 4t^2 + 2t - 1$. Find the velocity at the instant $t = 3$ seconds.

CODE:
ANSWER:

CODE:
ANSWER:

23 Find $\int \sin \frac{1}{3}x \, dx$

23 Find $\int \sin \frac{1}{3}x \, dx$

CODE:

ANSWER:

CODE:

ANSWER:

23 Find $\int \sin \frac{1}{3}x \, dx$

23 Find $\int \sin \frac{1}{3}x \, dx$

CODE:

ANSWER:

CODE:

ANSWER:

24 Solve for x: $\ln x + \ln(x - 2) = 3 \ln 2$

24 Solve for x: $\ln x + \ln(x - 2) = 3 \ln 2$

CODE:
ANSWER:

CODE:
ANSWER:

24 Solve for x: $\ln x + \ln(x - 2) = 3 \ln 2$

24 Solve for x: $\ln x + \ln(x - 2) = 3 \ln 2$

CODE:
ANSWER:

CODE:
ANSWER:

25 Exactly evaluate: $\int_0^2 x e^{3x^2} dx$.

25 Exactly evaluate: $\int_0^2 x e^{3x^2} dx$.

CODE:
ANSWER:

CODE:
ANSWER:

25 Exactly evaluate: $\int_0^2 x e^{3x^2} dx$.

25 Exactly evaluate: $\int_0^2 x e^{3x^2} dx$.

CODE:
ANSWER:

CODE:
ANSWER: