

Proving Vertices are those of Specific Triangles

Show that the given vertices are vertices of the triangle given.

It is difficult to list the "answers" to these, because you are proving that something works rather than solving an equation. You want to find the distance between the points, 3 different times, 3 different combinations. Then, you will plug those values into the Pythagorean theorem $a^2 + b^2 = c^2$, where c will be the largest distance that you found. When you plug these in, if you did the work correctly, they should ALL work!! You should end up with a TRUE statement (ex. $50 = 50$)

1.) (2, 1) (4, 0) (5, 7) right triangle

2.) (4, 0) (2, 1) (-1, -5) right triangle

3.) (4, 5) (0, 2) (4, 2) right triangle

4.) (1, 0) (13, 5) (13, 0) right triangle

5.) (-1, 1) (9, 4) (9, 1) right triangle

6.) (1, 5) (5, -2) (1, -2) right triangle

7.) (1, -3) (3, 2) (-2, 4) isosceles triangle

Finding the X and Y Intercepts Practice Problems

Find the x and y intercepts of each equation.

1.) $y = 16 - 4x^2$

2.) $y = 5x - 6$

3.) $y = \sqrt{x + 4}$

4.) $y = |3x - 7|$

5.) $y = 2x^3 - 4x^2$

6.) $y^2 = 3 - x$

1.) Finding the X and Y Intercepts Practice Answers

2.) X intercepts $(2, 0)$ $(-2, 0)$ y intercept $(0, 16)$

3.) X intercept $(\frac{6}{5}, 0)$ y intercept $(0, -6)$

4.) X intercept $(-4, 0)$ y intercept $(0, 2)$

5.) X intercept $(\frac{7}{3}, 0)$ y intercept $(0, 7)$

6.) X intercepts $(0, 0)$ $(2, 0)$ y intercept $(0, 0)$

7.) X intercept $(3, 0)$ y intercepts $(0, \sqrt{3})$ $(0, -\sqrt{3})$

Evaluating Piecewise Functions Practice Problems

$$\begin{cases} x^2 + 2 & x \leq -2 \\ 5 & -2 < x < 2 \\ 2x - 1 & x \geq 2 \end{cases}$$

1.) $f(-2)$

2.) $f(0)$

3.) $f(10)$

4.) $f(\frac{1}{2})$

5.) $f(-12)$

6.) $f(1)$

7.) $f(\frac{1}{4})$

1.) Evaluating Piecewise Functions Practice Answers

2.) 6

3.) 5

4.) 19

5.) 5

6.) 146

7.) 5

8.) 5

Average Rate of Change Practice Problems

Find the average rate of change of the given function from the given x_1 to x_2

1.) $f(x) = -2x + 15$ $x_1 = 0$ $x_2 = 3$

2.) $f(x) = x^2 + 12x - 4$ $x_1 = 1$ $x_2 = 5$

3.) $f(x) = x^3 - 3x^2 - x$ $x_1 = 1$ $x_2 = 3$

4.) $f(x) = -x^3 + 6x^2 + x$ $x_1 = 1$ $x_2 = 6$

5.) $f(x) = -\sqrt{x-2} + 5$ $x_1 = 3$ $x_2 = 11$

6.) $f(x) = -\sqrt{x+1} + 3$ $x_1 = 3$ $x_2 = 8$

Average Rate of Change Practice Answers

1.) -2

2.) 18

3.) 0

4.) 0

5.) $-\frac{1}{4}$

6.) $-\frac{1}{5}$

Determining if Functions are Even, Odd, Or Neither Practice Problems

Determine whether or not each function is even, odd, or neither.

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

2.) $g(x) = 2x^3 - 4x$

3.) $h(x) = 2x^3 - 3x^2 - 4x + 4$

4.) $k(x) = x^6 - 2x^2 + 3$

5.) $m(x) = x^2 + 2x - 3$

Determining if Functions are Even, Odd, Or Neither Practice Answers

Even, odd, or neither answers.

1.) Even

2.) Odd

3.) neither

4.) even

5.) even

6.) neither

Writing the Equation of a Circle Practice Problems

1) Center: $\left(-13, -\frac{17}{2}\right)$
Radius: 2

2) Center: $(-16, -5)$
Radius: $2\sqrt{2}$

3) Center: $(5, 0)$
Radius: 4

4) Center: $(11, -7)$
Radius: 1

5) Center: $\left(\frac{13}{2}, 14\right)$
Radius: 1

6) Center: $(2, 11)$
Radius: 6

7) Center: $(-2, 3)$
Radius: 5

8) Center: $(-12, 3)$
Radius: 7

9) Center: $(-5, -15)$
Radius: $\sqrt{3}$

10) Center: $(-1, 15)$
Radius: $\sqrt{11}$

Writing the Equation of a Circle Practice Answers

1) Center: $\left(-13, -\frac{17}{2}\right)$

Radius: 2

$$(x + 13)^2 + \left(y + \frac{17}{2}\right)^2 = 4$$

2) Center: $(-16, -5)$

Radius: $2\sqrt{2}$

$$(x + 16)^2 + (y + 5)^2 = 8$$

3) Center: $(5, 0)$

Radius: 4

$$(x - 5)^2 + y^2 = 16$$

4) Center: $(11, -7)$

Radius: 1

$$(x - 11)^2 + (y + 7)^2 = 1$$

5) Center: $\left(\frac{13}{2}, 14\right)$

Radius: 1

$$\left(x - \frac{13}{2}\right)^2 + (y - 14)^2 = 1$$

6) Center: $(2, 11)$

Radius: 6

$$(x - 2)^2 + (y - 11)^2 = 36$$

7) Center: $(-2, 3)$

Radius: 5

$$(x + 2)^2 + (y - 3)^2 = 25$$

8) Center: $(-12, 3)$

Radius: 7

$$(x + 12)^2 + (y - 3)^2 = 49$$

9) Center: $(-5, -15)$

Radius: $\sqrt{3}$

$$(x + 5)^2 + (y + 15)^2 = 3$$

10) Center: $(-1, 15)$

Radius: $\sqrt{11}$

$$(x + 1)^2 + (y - 15)^2 = 11$$

Evaluating Functions Practice Problems

1) $w(n) = n^3 - 2$; Find $w(-5)$

2) $f(n) = -2n - 3$; Find $f(9)$

3) $f(n) = n + 3$; Find $f(-7)$

4) $g(x) = 3x^2 + 4x$; Find $g(3)$

5) $f(x) = x - 2$; Find $f(-3)$

6) $w(n) = -n - 1$; Find $w(4x)$

7) $h(n) = -4n + 5$; Find $h\left(\frac{n}{2}\right)$

8) $g(x) = -x$; Find $g(x - 4)$

9) $h(x) = x + 4$; Find $h(-4x)$

10) $w(n) = n + 5$; Find $w(n^2)$

Evaluating Functions Practice Answers

1) $w(n) = n^3 - 2$; Find $w(-5)$

-127

2) $f(n) = -2n - 3$; Find $f(9)$

-21

3) $f(n) = n + 3$; Find $f(-7)$

-4

4) $g(x) = 3x^2 + 4x$; Find $g(3)$

39

5) $f(x) = x - 2$; Find $f(-3)$

-5

6) $w(n) = -n - 1$; Find $w(4x)$

$-4x - 1$

7) $h(n) = -4n + 5$; Find $h\left(\frac{n}{2}\right)$

$-2n + 5$

8) $g(x) = -x$; Find $g(x - 4)$

$-x + 4$

9) $h(x) = x + 4$; Find $h(-4x)$

$-4x + 4$

10) $w(n) = n + 5$; Find $w(n^2)$

$n^2 + 5$

Finding the Distance Between 2 Points Practice Problems

1) $(-4, 3), (3, -1)$

2) $(-7, -6), (-1, 3)$

3) $(3, -6), (4, 2)$

4) $(-4, 7), (1, -7)$

5) $(3, -7), (3, 5)$

6) $(0, 6), (-3, -4)$

7) $(5, 5), (8, 1)$

8) $(8, -4), (-4, -2)$

9) $(-7, -2), (-2, 7)$

10) $(-2, 8), (-7, -6)$

Finding the Distance Between 2 Points Practice Answers

1) $(-4, 3), (3, -1)$

$$\sqrt{65}$$

2) $(-7, -6), (-1, 3)$

$$3\sqrt{13}$$

3) $(3, -6), (4, 2)$

$$\sqrt{65}$$

4) $(-4, 7), (1, -7)$

$$\sqrt{221}$$

5) $(3, -7), (3, 5)$

$$12$$

6) $(0, 6), (-3, -4)$

$$\sqrt{109}$$

7) $(5, 5), (8, 1)$

$$5$$

8) $(8, -4), (-4, -2)$

$$2\sqrt{37}$$

9) $(-7, -2), (-2, 7)$

$$\sqrt{106}$$

10) $(-2, 8), (-7, -6)$

$$\sqrt{221}$$

Finding the Midpoint Between 2 Points Practice Problems

1) $(2, -1), (-8, -8)$

2) $(-2, 1), (-5, 3)$

3) $(-8, -6), (4, 0)$

4) $(-6, 10), (-2, 9)$

5) $(3, 8), (-2, -9)$

6) $(-2, 9), (-7, -8)$

7) $(-5, -2), (-1, -6)$

8) $(4, -10), (-6, 2)$

Finding the Midpoint Between 2 Points Practice Answers

1) $(2, -1), (-8, -8)$

$$\left(-3, -4\frac{1}{2}\right)$$

2) $(-2, 1), (-5, 3)$

$$\left(-3\frac{1}{2}, 2\right)$$

3) $(-8, -6), (4, 0)$

$$(-2, -3)$$

4) $(-6, 10), (-2, 9)$

$$\left(-4, 9\frac{1}{2}\right)$$

5) $(3, 8), (-2, -9)$

$$\left(\frac{1}{2}, -\frac{1}{2}\right)$$

6) $(-2, 9), (-7, -8)$

$$\left(-4\frac{1}{2}, \frac{1}{2}\right)$$

7) $(-5, -2), (-1, -6)$

$$(-3, -4)$$

8) $(4, -10), (-6, 2)$

$$(-1, -4)$$

Write the Slope-Intercept Form of the Equation Passing Through the Points

1) through: $(1, 0)$ and $(1, 4)$

2) through: $(5, -1)$ and $(0, 3)$

3) through: $(2, -3)$ and $(0, 4)$

4) through: $(0, -5)$ and $(-5, -3)$

5) through: $(0, -4)$ and $(1, -3)$

6) through: $(-5, 1)$ and $(1, -1)$

7) through: $(-1, 0)$ and $(0, 0)$

8) through: $(0, -4)$ and $(2, 1)$

Write the Slope-Intercept Form of the Equation Passing Through the Points Answers

1) through: $(1, 0)$ and $(1, 4)$

$$x = 1$$

2) through: $(5, -1)$ and $(0, 3)$

$$y = -\frac{4}{5}x + 3$$

3) through: $(2, -3)$ and $(0, 4)$

$$y = -\frac{7}{2}x + 4$$

4) through: $(0, -5)$ and $(-5, -3)$

$$y = -\frac{2}{5}x - 5$$

5) through: $(0, -4)$ and $(1, -3)$

$$y = x - 4$$

6) through: $(-5, 1)$ and $(1, -1)$

$$y = -\frac{1}{3}x - \frac{2}{3}$$

7) through: $(-1, 0)$ and $(0, 0)$

$$y = 0$$

8) through: $(0, -4)$ and $(2, 1)$

$$y = \frac{5}{2}x - 4$$

Finding the Zeros of a Function Practice

$$1) \frac{x^2 + 8x + 7}{x + 7}$$

$$2) \frac{n^2 - 4n - 5}{5 - n}$$

$$3) \frac{k^2 + 12k + 36}{k + 6}$$

$$4) \frac{a^2 - 64}{a + 8}$$

$$5) \frac{90v^2}{63v^2 - 9v}$$

$$6) \frac{10x + 20}{20}$$

$$7) \frac{12n}{28n^2 - 40n}$$

$$8) \frac{m^2 - 11m + 30}{m - 5}$$

$$9) \frac{n - 7}{n^2 - 10n + 21}$$

$$10) \frac{n^2 + 13n + 42}{n + 6}$$

Finding the Zeros of a Function Practice Answers

$$1) \frac{x^2 + 8x + 7}{x + 7}$$

-1, -7

$$2) \frac{n^2 - 4n - 5}{5 - n}$$

5, -1

$$3) \frac{k^2 + 12k + 36}{k + 6}$$

-6

$$4) \frac{a^2 - 64}{a + 8}$$

-8, 8

$$5) \frac{90v^2}{63v^2 - 9v}$$

0

$$6) \frac{10x + 20}{20}$$

-2

$$7) \frac{12n}{28n^2 - 40n}$$

0

$$8) \frac{m^2 - 11m + 30}{m - 5}$$

6, 5

$$9) \frac{n - 7}{n^2 - 10n + 21}$$

7

$$10) \frac{n^2 + 13n + 42}{n + 6}$$

-6, -7