

Use the coordinates of segment \overline{AB} ; A(-4, 9) & B(2, 7) to find...

- 1) Distance between A&B
(simplest radical form) 2) Midpoint of \overline{AB} 3) Slope of \overline{AB}

Use the function; $f(x) = 2x^2 - 5x + 6$ to find...

- 4) $f(-4)$ 5) $f(\sqrt{3})$ 6) $f(2 - 5i)$ 7) its zero

Solve the following equations by factoring, the quadratic formula, the rational root theorem (p's & q's) or any other methods we've discussed this year.

- 8) $2x^2 + 12x - 1 = 21$ 9) $3x^2 - 5x^2 + 12x - 20 = 0$ 10) $x^3 + 7x^2 = 36$

Use the inequality; $y > x^2 - 16x + 63$ to answer...

- 11) What is the vertex? 12) What are the x-intercepts?

13) Describe the shape of the graph, and how it would differ from the graph of $y = x^2 - 16x + 63$.

Find the equation of the line described.

14) Passes thru $(-1, 5)$ and is perpendicular to the line with equation $3x - 6y = 11$

15) Has roots of $-2 \pm \sqrt{5}$
(hint: use sum & product of roots formulas)

Solve the inequalities (you will need to use "sign-analysis" on #18).

16) $18 - (4x + 11) \leq 2(7 - 2x)$

17) $|7 - 3y| > 28$

18) $x(x + 6)^2(3x - 2) \geq 0$

Name the domain for...

19) $g(x) = 2|x + 9| - 1$

20) $f(x) = \frac{3}{x^2 - 16}$

21) $h(x) = \sqrt{x - 12}$

For #22-25 use the following functions: $f(x) = \frac{1}{2}x - 8$ $g(x) = x^3 - 2x + 1$ $h(x) = 2x^2$ to find...

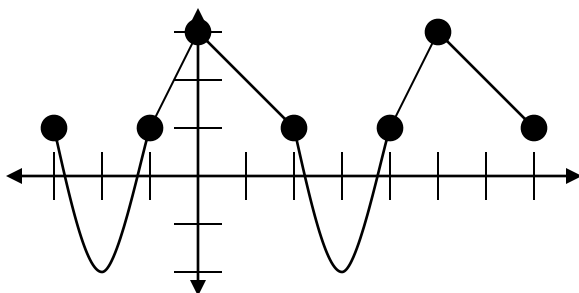
22) $(h \cdot g)(x)$

23) $(h \circ f)(x)$

24) $g(h(f(12)))$

25) $f^{-1}(x)$

Use the graph of the function $f(x)$ pictured below to answer the following...



26) The amplitude?

27) The period?

28) $f(100)$

29) $f(-98)$

On the next page, sketch...

30) $2f(x)$

31) $f(-x) + 1$

30)

31)

Given the equation of a circle: $(x + 6)^2 + (y - 3)^2 = 32$, find...

32) The center of the circle.

33) The radius of the circle.
(simplest radical form)

Given the equation of a hyperbola: $\frac{x^2}{9} - \frac{y^2}{4} = 1$, find...

33) The equations of the asymptotes.

34) The coordinates of the foci.

Given the equation of the equation of a parabola: $x = -\frac{1}{8}y^2$, find...

35) The vertex.

36) The directrix.

37) Which way does the graph open (up, down left or right)?

38) The following equation is that of an ellipse. Change it into standard form. $\frac{(x-h)^2}{a} + \frac{(y-k)^2}{b} = 1$

$$y^2 + 5x^2 + 6y - 10x + 9 = 0$$

Round any remaining answers (if necessary) to nearest tenths.

- 39) Name a positive coterminal angle for -907° .
- 40) Convert $201^\circ 55''$ to radians.
- 41) Find the arc length in a circle with radius 12cm cut by a central angle with a measure of 1.75radians.
- 42) Find the area of a sector of a circle with radius of 22 inches cut by a 115° central angle.
- 43) Name the reference angle for $\sin(-117^\circ)$.
- 44) Find the exact value of $\cos 495^\circ$.
- 45) Given $\triangle ABC$ with $\angle A = 90^\circ$, $a = 40$, $b = 27$, find $\angle B$.
- 46) Given $\triangle XYZ$ with $\angle Y = 90^\circ$, $z = 11$, $\angle Z = 18^\circ$, find x .
- 47) Find the area of a triangle with sides 9cm and 8cm in length with an included angle of 74° .
- 48) Given $\triangle BOY$ where $\angle B = 60^\circ$, $\angle Y = 25^\circ$, $b = 8$, find y .
- 49) Given $\triangle PQR$ where $\angle P = 35^\circ$, $q = 5$, $r = 6$, find p .

50) A 550 foot zip line anchored in the ground extends upward across a pond to a platform on the opposite side of the pond. The zip line rises at an angle of 3.75° . If the pillar supporting the platform has one-third of its total length buried below ground, approximately how deep did the builders dig the hole for the pillar?