Algebra 2 Name_____

PR2 Exam DO NOT WRITE ON EXAM Date_____ Period____

Find a coterminal angle between 0° and 360°.

1) 698°

2) −285°

Perform the indicated operation.

3) $g(t) = -4t - 3$
$h(t) = 3t + 4$
Find $g(h(0))$

4) $h(n) = 2n - 1$
$g(n) = 2n + 5$
Find $(h + g)(-6)$

5) $g(x) = x^2 - 5$
$f(x) = 2x + 1$
Find $g(-9) \div f(-9)$

6) $f(n) = n + 3$
$g(n) = 2n - 5$
Find $f(-9) \cdot g(-9)$

Find the common difference, the 52nd term, and the explicit formula.

7) 40, 45, 50, 55, ...

8) −20, −50, −80, −110, ...

Evaluate each arithmetic series described.

9) $13 + 17 + 21 + 25..., \ n = 13$

10) $(-7) + (-5) + (-3) + (-1)..., \ n = 8$

Graph each function using radians for $(0, 2\pi)$.

11) $y = 3\sin\theta$

12) $y = \frac{1}{2} \cdot \cos\theta$

13) $y = 3\cos\theta$

14) $y = 2\cos\theta$

Find the common ratio, the 8th term, and the explicit formula.

15) 1, −5, 25, −125, ...

16) 1, 4, 16, 64, ...

Evaluate each geometric series described.

17) $-2 + 6 - 18 + 54..., \ n = 7$

18) $3 - 9 + 27 - 81..., \ n = 6$

Solve each system of equations.

19) $2x^2 - 11x - 3y + 5 = 0$
$x + y + 1 = 0$

20) $-x^2 + y^2 + 10x - 73 = 0$
$6x^2 + y^2 - 46x + 39 = 0$

21) A boat traveled 273 miles downstream and back. The trip downstream took 13 hours. The trip back took 91 hours. Find the speed of the boat in still water and the speed of the current.

22) The water park is a popular field trip destination. This year the senior class at High School A and the senior class at High School B both planned trips there. The senior class at High School A rented and filled 6 vans and 6 buses with 408 students. High School B rented and filled 9 vans and 12 buses with 783 students. Each van and each bus carried the same number of students. How many students can a van carry? How many students can a bus carry?

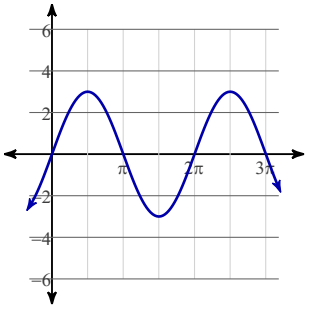
Write a polynomial function of least degree with integral coefficients that has the given zeros.

23) $-2, \ i$

24) $0, \ 4, \ -1$

Answers to PR2 Exam DO NOT WRITE ON EXAM

1) 338°
2) 75°
3) −19
4) −20
5) $-\frac{76}{17}$
6) 138
7) Common Difference: $d = 5$
$a_{52} = 295$
Explicit: $a_n = 35 + 5n$
8) Common Difference: $d = -30$
$a_{52} = -1550$
Explicit: $a_n = 10 - 30n$
9) 481
10) 0
11)



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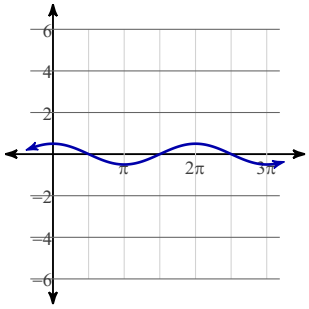

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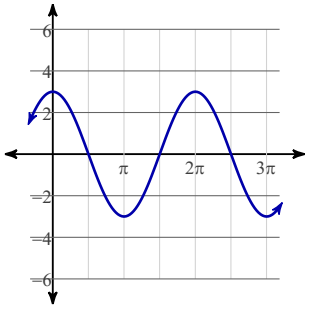

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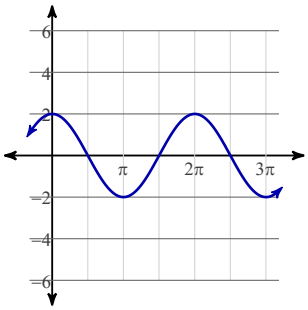

15) Common Ratio: $r = -5$
$a_8 = -78125$
Explicit: $a_n = (-5)^{n-1}$
16) Common Ratio: $r = 4$
$a_8 = 16384$
Explicit: $a_n = 4^{n-1}$
17) −1094
18) −546
19) $(2, -3)$
20) $(4, 7), (4, -7)$
21) boat: 12 mph, current: 9 mph
22) Van: 11, Bus: 57
23) $f(x) = x^3 + 2x^2 + x + 2$
24) $f(x) = x^3 - 3x^2 - 4x$