

Alg 2 - Chap 6 Practice Test, IA Ver 2

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(6-1) Name each polynomial by degree and number of terms.

1) $7x - 9x^2 - 8$

(Extension of 6-1) Describe the end behavior of each function.

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

(6-2) Write as a polynomial in standard form.

3) $(n - 3)(4n + 1)$

(6-2) Write a polynomial function of least degree with integral coefficients that has the given zeros.

4) 2, -3, 1, -5

(6-2) Find the zeros of the function.

5) $y = x^3 - 7x^2 + 10x$

(6-3) Divide.

6) $(n^3 - 16n^2 + 50n + 59) \div (n - 6)$

7) $(5n^3 + 2n^2 - 56n + 65) \div (5n - 8)$

(6-4) Factor each completely.

8) $5b^2 - 40b$

9) $x^3 - 1$

10) $u^4 - 13u^2 + 42$

(6-5) State the possible rational zeros for the function.

11) $f(x) = 5x^3 - 9x^2 + 3x + 1$

(6-5) Answer the following question.

12) Find the 3rd degree polynomial that has roots of -5 and $1 - i$. Write it in standard form.

(6-6) Find all roots.

13) $x^5 + 8x^3 + 16x = 0$

14) $x^4 + 3x^2 - 18 = 0$

15) $x^4 + 6x^2 - 27 = 0$

(6-7) Answer the following two questions.

16) How many different nine-player batting orders can be chosen from a team of 14 players?

17) How many different starting fives can be chosen for a basketball team with 8 players?

(6-7) Answer the following question.

18) 12 students are in a class, and 4 are chosen randomly to show their work on a problem. If 4 of the students are girls, what is the probability that all 4 girls are chosen?

(6-8) Find each term described.

19) 3rd term in expansion of $(3y + 2x)^4$

(6-8) Expand completely.

20) $(1 + 2x)^5$

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(6-1) Name each polynomial by degree and number of terms.

1) $7x - 9x^2 - 8$

quadratic trinomial

(Extension of 6-1) Describe the end behavior of each function.

2) $f(x) = x^3 - 3x^2 + 4$ $f(x) \rightarrow -\infty$ as $x \rightarrow -\infty$
 $f(x) \rightarrow +\infty$ as $x \rightarrow +\infty$

(6-2) Write as a polynomial in standard form.

3) $(n - 3)(4n + 1)$

$4n^2 - 11n - 3$

(6-2) Write a polynomial function of least degree with integral coefficients that has the given zeros.

4) 2, -3, 1, -5

$f(x) = x^4 + 5x^3 - 7x^2 - 29x + 30$

(6-2) Find the zeros of the function.

5) $y = x^3 - 7x^2 + 10x$

$\{0, 2, 5\}$

(6-3) Divide.

6) $(n^3 - 16n^2 + 50n + 59) \div (n - 6)$

$n^2 - 10n - 10 - \frac{1}{n - 6}$

7) $(5n^3 + 2n^2 - 56n + 65) \div (5n - 8)$

$n^2 + 2n - 8 + \frac{1}{5n - 8}$

(6-4) Factor each completely.

8) $5b^2 - 40b$

$5b(b - 8)$

9) $x^3 - 1$

$(x - 1)(x^2 + x + 1)$

10) $u^4 - 13u^2 + 42$

$(u^2 - 6)(u^2 - 7)$

(6-5) State the possible rational zeros for the function.

11) $f(x) = 5x^3 - 9x^2 + 3x + 1$

$$\pm 1, \pm \frac{1}{5}$$

(6-5) Answer the following question.

12) Find the 3rd degree polynomial that has roots of -5 and $1 - i$. Write it in standard form.

The dot next to the choice indicates that it is the answer.

(6-6) Find all roots.

13) $x^5 + 8x^3 + 16x = 0$

$$\{0, 2i \text{ mult. } 2, -2i \text{ mult. } 2\}$$

14) $x^4 + 3x^2 - 18 = 0$

$$\{\sqrt{3}, -\sqrt{3}, i\sqrt{6}, -i\sqrt{6}\}$$

15) $x^4 + 6x^2 - 27 = 0$

$$\{\sqrt{3}, -\sqrt{3}, 3i, -3i\}$$

(6-7) Answer the following two questions.

16) How many different nine-player batting orders can be chosen from a team of 14 players?

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17) How many different starting fives can be chosen for a basketball team with 8 players?

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(6-7) Answer the following question.

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If 4 of the students are girls, what is the probability that all 4 girls are chosen?

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(6-8) Find each term described.

19) 3rd term in expansion of $(3y + 2x)^4$

$$216y^2x^2$$

(6-8) Expand completely.

20) $(1 + 2x)^5$

$$1 + 10x + 40x^2 + 80x^3 + 80x^4 + 32x^5$$