

Name: _____ Date: _____

Unit 1 Test Review1. Consider the polynomial $9x^4 - 3x + 7x^6$.Write the polynomial in standard form.

$7x^6 + 9x^4 - 3x$

What is the degree of the polynomial?6What is the leading coefficient?7Classify the polynomial according to the number of terms.trinomial**Complete the following statements with Always, Never or sometimes.**2. The sum of a rational number and a rational number is Always rational3. The sum of a rational and an irrational number is Always irrational4. The product of a non-zero rational number a rational number is Always rational5. The product of an irrational number and an irrational number is sometimes irrational6. The product of an irrational number and an irrational number is sometimes irrational.

7. Which of the following numbers can you add to a rational number to obtain an irrational number?
 number? **none**

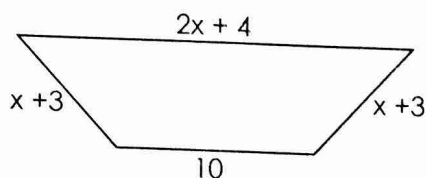
a) 2.526

b) $\sqrt{9}$

c) $\frac{11}{13}$

d) $\sqrt{25}$

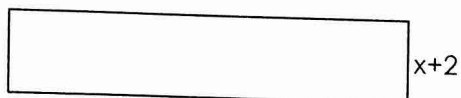
8. Give the perimeter of the deck shown below.



$4x + 20$

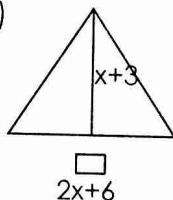
9. Find the area of the figures

a)



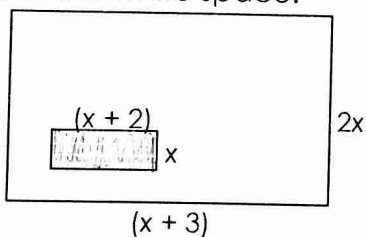
$(x+2)(x+2)$ $4x+2$
 $4x^2 + \cancel{4x} + 4$
10

b)



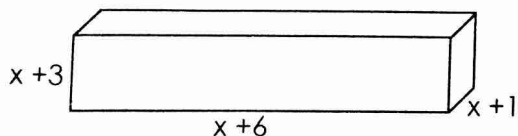
$\frac{1}{2}(2x+6)(x+3)$
 $(x+3)(x+3)$
 $x^2 + 6x + 9$

10. Find the area of the white space.



$2x(x+3) - x(x+2)$
 $2x^2 + 6x - x^2 - 2x$
 $x^2 + 4x$

11. Find the volume of the rectangular prism.



$(x+3)(x+6)(x+1)$
 $(x^2+3x+6x+18)(x+1)$
 $(x^2+9x+18)(x+1)$
 $x^3 + 9x^2 + 18x + x^2 + 9x + 18$
 $x^3 + 10x^2 + 27x + 18$

Add or Subtract:

12. $(5x^2 - 8x - 6) + (7x^2 - 9x - 3)$

$12x^2 - 17x - 9$

13. $(3x^2 + 5x - 9) - (6x^2 + 5x - 11)$
 $-6x^2 - 5x + 11$

$-3x^2 + 2$

Multiply:

14. $7x^2(9xy^3 - 8z^4y + 4y^3)$

$63x^3y^3 - 56x^2yz^4 + 28x^2y^3$

15. $(x - 4)^2$

$x^2 - 8x + 16$

16. $(x - 6)(x + 7)$

$x^2 + x - 42$

17. $(x - 2)(x^2 - 4x + 6)$

$x^3 - 4x^2 + 6x - 2x^2 + 8x - 12$

$x^3 - 6x^2 + 14x - 12$

Simplify.

1) $-2\sqrt{54} - 6\sqrt{6}$

2) $-7\sqrt{125} - 35\sqrt{5}$

3) $\sqrt{48v^2} \quad 4\sqrt{3}$

4) $-\sqrt{6} - 3\sqrt{54}$
 $-\sqrt{6} - 9\sqrt{6} = -10\sqrt{6}$

5) $-2\sqrt{2} + 3\sqrt{5} - 2\sqrt{5}$
 $-2\sqrt{2} + \sqrt{5}$

6) $2\sqrt{5} + 3\sqrt{2} + 2\sqrt{45}$
 $8\sqrt{5} + 3\sqrt{2}$

7) $2\sqrt{24} + 3\sqrt{27} + 3\sqrt{6}$
 $4\sqrt{6} + 9\sqrt{3} + 3\sqrt{6}$
 $7\sqrt{6} + 9\sqrt{3}$

8) $\sqrt{3} \cdot \sqrt{15} \quad 3\sqrt{5}$

9) $5\sqrt{5} \cdot -5\sqrt{3}$
 $-25\sqrt{15}$

10) $\sqrt{10}(-4\sqrt{5} + 3\sqrt{3})$
 $-4\sqrt{50} + 3\sqrt{30}$
 $-20\sqrt{2} + 3\sqrt{30}$

11) $\sqrt{10}(-3\sqrt{5} + 5)$
 $-3\sqrt{50} + 5\sqrt{10}$
 $-15\sqrt{2} + 5\sqrt{10}$

12) $\sqrt{10}(3\sqrt{3} + \sqrt{2})$
 $3\sqrt{30} + \sqrt{20}$
 $3\sqrt{30} + 2\sqrt{5}$