

21. 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?

6

What is the leading coefficient?

7

Classify the polynomial according to the number of terms.

Trinomial

Complete the following statements with Always, Never or sometimes.

The sum of a rational number and a rational number is Always rational

The sum of a rational and an irrational number is Always irrational

The product of a non-zero rational number and a rational number is Always rational

The product of an irrational number and an irrational number is Sometimes irrational

26. The product of an irrational number and an irrational number is Sometimes irrational.

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

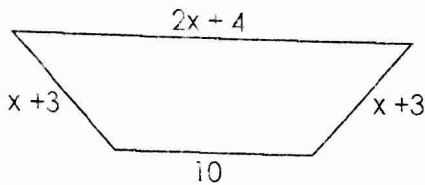
a) 2.526...

b) $\sqrt{9}$

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

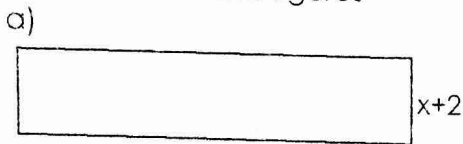
d) $\sqrt{25}$

28. Give the perimeter of the deck shown below.



$$4x + 20$$

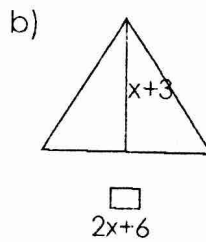
29. Find the area of the figures



$$(4x+2)(x+2)$$

$$4x^2 + 8x + 2x + 4$$

$$4x^2 + 10x + 4$$

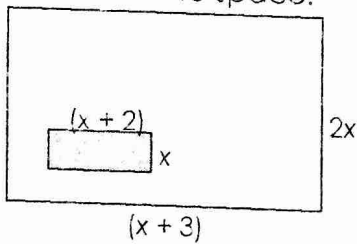


$$\frac{1}{2}(2x+6)(x+3)$$

$$(x+3)(x+3)$$

$$x^2 + 6x + 9$$

30. Find the area of the white space.

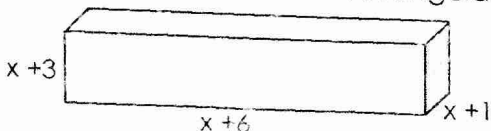


$$2x^2 + 6x$$

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

$$x^2 + 4x$$

31. Find the volume of the rectangular prism.



$$(x+3)(x+6)(x+1)$$

$$x^2 + 6x + 3x + 18$$

$$(x^2 + 9x + 18)(x+1)$$

$$x^3 + 10x^2 + 27x + 18$$

$$x^3 + 9x^2 + 18x + x^2 + 9x + 18$$

Add or Subtract:

32. $(5x^2 - 8x - 6) + (7x^2 - 9x - 3)$

$12x^2 - 17x - 9$

33. $(3x^2 + 5x - 9) - (6x^2 + 5x + 11)$

$-3x^2 + 2$

Multiply:

34. $7x^2(9xy^3 - 8z^4y + 4y^3)$

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

35. $(x-4)^2$

$x^2 - 8x + 16$

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

$x^2 + x - 42$

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

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

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

Simplify.

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

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

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

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

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) $\sqrt{3} \cdot \sqrt{15} = 3\sqrt{5}$

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

10) $\sqrt{10}(-4\sqrt{5} + 3\sqrt{3}) - 40\sqrt{50} + 3\sqrt{30} - 200\sqrt{2} + 3\sqrt{30}$

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

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

$-15\sqrt{2} + 5\sqrt{10}$