SM2H

Name: _____ Period: _____

2.1 Number Systems & Polynomials 2019-20

Identify all of the following number systems that each number belongs to: *natural numbers, whole numbers, integers, rational numbers, irrational numbers, real numbers, imaginary numbers, or complex numbers.*

1. $0.\overline{352}$

2. $\sqrt{36}$

3. $-\pi$

4. $\sqrt{-25}$

5. $4-3i$

6. 0

Determine whether the given set is closed or open under each operation. If the set is open under an operation, give an example that demonstrates this.

7. Integers
   - Addition:
   - Subtraction:
   - Multiplication:
   - Division:

8. Even Integers
   - Addition:
   - Subtraction:
   - Multiplication:
   - Division:

9. Odd Integers
   - Addition:
   - Subtraction:
   - Multiplication:
   - Division:

Simplify. Write your answers in descending order.

10. $\left(3n^2+1\right)+\left(8n^2-8\right)$

11. $\left(6n^2+5n\right)-\left(n^2-2n\right)$

12. $\left(m^3+5m^2\right)-\left(3m^3+m^2\right)+\left(-m^2+2m^3\right)$

13. $\left(5m^2-2mp-6p^2\right)+\left(-3m^2+5mp+p^2\right)$

Simplify. Write your answers in descending order

14. $2h\left(h^2-6h+1\right)$

15. $-4y\left(-y^3-8y^2+2y\right)$

16. $\left(7m-2\right)\left(5m+1\right)$

17. $\left(3z^2-4\right)\left(7z-5\right)$

18. $\left(-3t+5\right)\left(-3t-2\right)$

19. $\left(y-8\right)^2$

20. $\left(2r-3\right)^2$

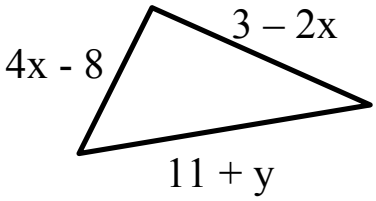
21. $\left(5x^2+3x-11\right)\left(6x-1\right)$

22. $\left(4y^2+y-2\right)\left(3y^2-5y-7\right)$

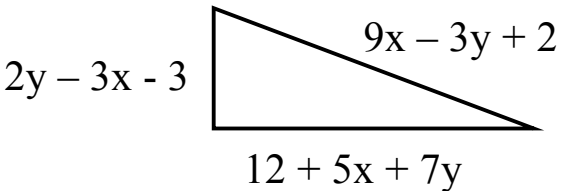
23. $(3x^2-6x+10)(x^2+7x-5)$

Find the PERIMETER of the shape.
Equation: Perimeter = Sum of all the sides

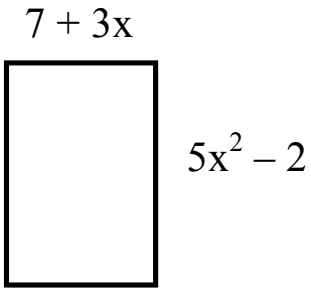
24.



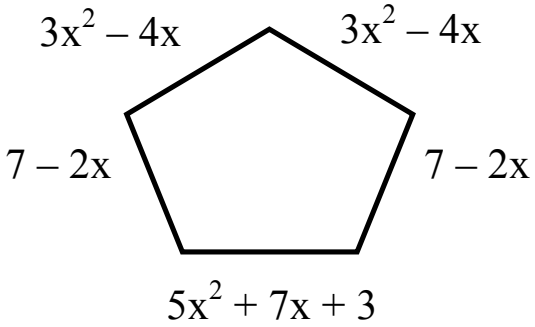
25.



26. Find the area.



27. Find the perimeter.

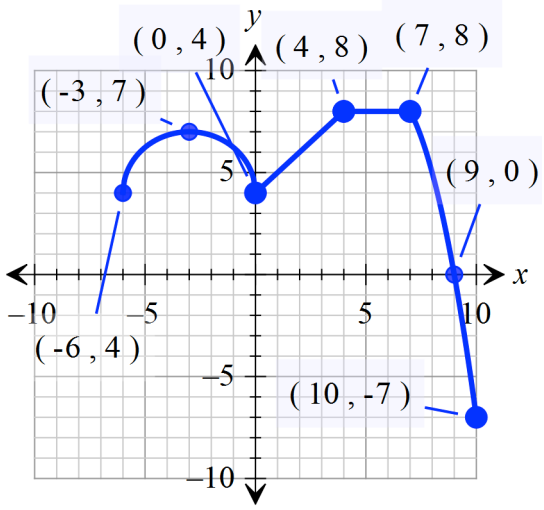


28. The measure of the perimeter of a triangle is (37s + 42) cm. It is known that two of the sides of the triangle have measures of (14s + 16) cm and (10s + 20) cm. Find the length of the third side.

29. For a rectangle with length of (3x + 4) in. and perimeter of (10x + 18) in., what is the width of the rectangle?

Review:

30.



Domain:_____ Range:_____

x-intercept(s):_____*y*-intercept:_____

Relative Maximum Point(s):_____

Relative Maximum Value(s):_____

Relative Minimum Point(s):_____

Relative Minimum Value(s):_____

Absolute Maximum Point:_____Value:_____

Absolute Minimum Point:_____Value: _____

Positive:_____ Negative:_____

Increasing:_____

Decreasing:_____

Constant:_____

Left End Behavior: $\lim_{x \to -\infty} f(x) =$ _____

Right End Behavior: $\lim_{x \to \infty} f(x) =$ _____