**Find the value of each numerical expression. Follow the order of operations when finding each value.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **1.** | $$25÷5-4=$$ | **2.** | $$216÷6+4\*2=$$ | **3.** | $$144÷12+(12-8)=$$ |
|  |  |  |  |  |  |

**Find the terms, constant/s and coefficient/s for each expression.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **4.** | $$6x+4y+123=$$ | **5.** | $$k+7l+2=$$ | **6.** | $$12+z=$$ |
|  | $$Terms: $$$$Variables: $$$$Constant: $$$$Coefficients: $$ |  | $$Terms: $$$$Variables: $$$$Constant: $$$$Coefficients: $$ |  | $$Terms: $$$$Variable: $$$$Constant: $$$$Coefficient: $$ |
| **7.** | $$x+y=$$ | **8.** | $$12a+b+13=$$ | **9.** | $$g+15j+13z=$$ |
|  | $$Terms: $$$$Variables: $$$$Constant: $$$$Coefficients: $$ |  | $$Terms: $$$$Variables: $$$$Constant: $$$$Coefficients: $$ |  | $$Terms: $$$$Variable: $$$$Constant: $$$$Coefficients: $$ |

**Write an algebraic expression for each verbal phrase.**

|  |  |  |  |
| --- | --- | --- | --- |
| **10.** | $x$ increased by 8 | **11.** | the product of $ x$ and 10 |
|  |  |  |  |
| **12.** | the quotient of 24 and 6 | **13.** | $z$ decreased by 23 |
|  |  |  |  |
| **14.** | The sum of $ n$ and 12, divided by 5 | **15.** | 6 more than 6 times a number |
|  |  |  |  |

**Write each as a verbal expression.**

|  |  |  |  |
| --- | --- | --- | --- |
| **16.** | $$19-14$$ | **17.** | $$\frac{x}{2}$$ |
|  |  |  |  |
| **18.** | $$x÷14$$ | **19.** | $$2a$$ |
|  |  |  |  |
| **20.** | $$a+122$$ | **21.** | $$12k$$ |
|  |  |  |  |

**Evaluate each expression using the values given.**

|  |  |  |
| --- | --- | --- |
| **22.** | $$2x+3y when x=8 and y=4$$ |  |
| **23.** | $$a-4b when a=17 and b=3$$ |  |
| **24.** | $$12x-(y+10) when x=10 and y=16$$ |  |
| **25.** | $$\frac{121}{x}-\frac{16}{y} when x=11 and y=8$$ |  |

**Write an algebraic expression for each problem.**

|  |  |
| --- | --- |
| **26.** | Jessica had $ x$ books. Then she went to a book sale and bought 12 more books. Choose the expression that shows how many books Jessica has now. |
|  |  |
| **27.** | There were $ x$ birds on the tree. 22 of the birds flew away. Choose the expression that shows how many birds are on the tree now. |
|  |  |
| **28.** | John has $ y$ cookies. He splits them evenly among 13 bags. Choose the expression that shows how many cookies are in each bag. |
|  |  |

**ANSWERS**

**Find the value of each numerical expression. Follow the order of operations when finding each value.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **1.** | $$25÷5-4=$$ | **2.** | $$216÷6+4\*2=$$ | **3.** | $$144÷12+(12-8)=$$ |
|  | $$25÷5-4=$$$$=5-4=$$$$=1$$ |  | $$216÷6+4\*2=$$$$=36+8=$$$$=44$$ |  | $$144÷12+\left(12-8\right)=$$$$=12+4=$$$$=16$$ |

**Find the terms, constant/s and coefficient/s for each expression.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **4.** | $$6x+4y+123=$$ | **5.** | $$k+7l+2=$$ | **6.** | $$12+z=$$ |
|  | $$Terms: 6x , 4y,123$$$$Variables: x, y $$$$Constant: 123$$$$Coefficients: 6, 4$$ |  | $$Terms: k , 7l,2$$$$Variables: k,l $$$$Constant: 2$$$$Coefficients: 1,7$$ |  | $$Terms: 12 , z$$$$Variable: z $$$$Constant: 12$$$$Coefficient: 1$$ |
| **7.** | $$x+y=$$ | **8.** | $$12a+b+13=$$ | **9.** | $$g+15j+13z=$$ |
|  | $$Terms: x , y$$$$Variables: x, y $$$$Constant: none$$$$Coefficients: 1,1$$ |  | $$Terms: 12a , b,13$$$$Variables: a,b $$$$Constant: 13$$$$Coefficients: 12,1$$ |  | $$Terms: g , 15j,13z$$$$Variable: g,j, z $$$$Constant: none$$$$Coefficients: 1, 15, 13$$ |

**Write an algebraic expression for each verbal phrase.**

|  |  |  |  |
| --- | --- | --- | --- |
| **10.** | $x$ increased by 8 | **11.** | the product of $ x$ and 10 |
|  | $$x+8$$ |  | $$x\*10$$ |
| **12.** | the quotient of 24 and 6 | **13.** | $z$ decreased by 23 |
|  | $$\frac{24}{6}$$ |  | $$z-23$$ |
| **14.** | The sum of $ n$ and 12, divided by 5 | **15.** | 6 more than 6 times a number |
|  | $$\left(n+12\right)÷5$$ |  | $$6+6k$$ |

**Write each as a verbal expression.**

|  |  |  |  |
| --- | --- | --- | --- |
| **16.** | $$19-14$$ | **17.** | $$\frac{x}{2}$$ |
|  | the difference of 19 and 14 |  | half of $ x$ |
| **18.** | $$x÷14$$ | **19.** | $$2a$$ |
|  | $x$ divided by 14 |  | twice $ a$ |
| **20.** | $$a+122$$ | **21.** | $$12k$$ |
|  | $a$ increased by 122 |  | 12 times a number |

**Evaluate each expression using the values given.**

|  |  |  |
| --- | --- | --- |
| **22.** | $$2x+3y when x=8 and y=4$$ | $$ 2x+3y=$$$$2\*8+3\*4=$$$$=16+12=$$$$=28$$ |
| **23.** | $$a-4b when a=17 and b=3$$ | $$ a-4b=$$$$=17-4\*3=$$$$=17-12=$$$$=5$$ |
| **24.** | $$12x-(y+10) when x=10 and y=16$$ | $$ 12x-\left(y+10\right)=$$$$=12\*10-(16+10)=$$$$=120-26=$$$$=94$$ |
| **25.** | $$\frac{121}{x}-\frac{16}{y} when x=11 and y=8$$ | $$ \frac{121}{x}-\frac{16}{y}= $$$$=\frac{121}{11}-\frac{16}{8} =$$$$=11-2=$$$$=9$$ |

**Write an algebraic expression for each problem.**

|  |  |
| --- | --- |
| **26.** | Jessica had $ x$ books. Then she went to a book sale and bought 12 more books. Choose the expression that shows how many books Jessica has now. |
|  | $$x+12$$ |
| **27.** | There were $ x$ birds on the tree. 22 of the birds flew away. Choose the expression that shows how many birds are on the tree now. |
|  | $$x-22$$ |
| **28.** | John has $ y$ cookies. He splits them evenly among 13 bags. Choose the expression that shows how many cookies are in each bag. |
|  | $$y÷13$$ |