# *Algebra & Linear Equation Test*

Name: Div.: Score:

Write out the following in equation form:

1. Five less than four times a number is fifteen. 4n -5
2. The quotient of four more than a number and three is nine. n+4 ÷ 3 = 9

Evaluate the following expressions using $x=3, y=2$

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| --- | --- |
| 1. $3x-6=$

$$3\left(3\right)-6=9-6=3$$ | 1. $x-2y=$

$$3-2\left(2\right)=3-4=-1$$ |
| 1. $2x+y=$

$$2\left(3\right)+2=6+2=8$$ | 1. $xy-y=$

$$3\left(2\right)-2=6-2=4$$ |

### Graphing Linear Equations

1. Fill in the following table of values and graph the line.

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 y = 3*x*– *3*

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| *x* | *y* |
| *0* | -3 |
| *1* | 0 |
| *2* | 3 |

1. Fill in the following table of values and graph the line.

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 y = 2*x* – *2*

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| *x* | *Y* |
| *0* | -2 |
| *1* | 0 |
| *2* | 2 |

1. Fill in the following table of values and graph the line.

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 y = $\frac{1}{2}$ *x + 3*

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| *x* | *y* |
| *0* | 3 |
| *2* | 4 |
| *4* | 5 |

1. Fill in the following table of values and graph the line.

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 y = $\frac{x}{4}$ – 2

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| --- | --- |
| *x* | *y* |
| *-4* | -3 |
| *0* | -2 |
| *4* | -1 |

|  |  |
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| Create an equation to fit the Table of Values: |  |
| 1.

|  |  |
| --- | --- |
| *x* | *y* |
| 11 | 32 |
| 2 | 5 |
| 3 | 7 |

2÷1 = 2Equation: \_\_\_\_2*x* +1\_\_\_\_\_\_\_\_\_\_\_ |

|  |  |
| --- | --- |
| *x* | *y* |
| 51 | 63 |
| 6 | 9 |
| 7 | 12 |

5(3) = 15 - 9 = 6Equation: ­­­­­­­­­­\_\_\_\_3*x - 9*\_\_\_\_\_\_\_\_\_\_\_\_ |

|  |  |
| --- | --- |
| Expand & Simplify:  |  |
| 1. 2$\left(x-4\right)-5x+7$

2*x* – 8 – 5*x* + 7-3*x* -1 | 1. $2\left(x+2\right)+2x-5$

2*x* + 4 + 2*x* -54*x* - 1 |
| Solve for *x*. Check your answer using substitution: |  |
| 1. 14 = 3*x* – 6

20= 3x 20÷3 = x | 1. 4*x* – 8 = 10

4x = 18 x = 18 ÷4 |
| 1. $\frac{x}{3}$ – 5 = 4

 x÷3 = 9 x = 27 | 1. $\frac{x}{4}$ + 6 = (– 1)

  x ÷4 = -7 x = -28 |
| 1. $3\left(x-2\right)=-9$

3x – 6 = - 9 3x = -3 x = -3 ÷3 x = -1 | 1. 2(*x* + 2) = 10

2x + 4 = 102x = 6x = 6 ÷2x = 3 |

1. If Jennifer doubled the money that she has in her account now and then took out $80, she would have $200 left in her account. How much money does she have in her account now?

2m – 80 = $200 🡪 2m = 280 🡪 m = 140

1. Cost of a concert ticket for a student is $3 less than half of an adult ticket. If a student ticket costs $6, how much does an adult ticket cost?

(a÷2) – 3 = 6 🡪 a÷2 = 9 🡪 a = 18

**BONUS**

Find the Slope & Y-intercept:

1. *x* + 4 *= y* Slope (m): 1 y-intercept (+b): +4
2. y = $\frac{x}{3}$ – 4 Slope (m): 1/3 y-intercept (+b): -4