ALEKS Pre-Test

**Section 1**

For questions 1-15 simplify.

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| 1. $4-(-12)$ | 2. $-15+4$ |
| 3. $(-6)(-8)$ | 4. $\frac{36}{-12}$ |
| 5. $56+489$ | 6. $122-37$ |
| 7. $77(92)$ | 8. $219÷18$ Write answer as a whole number plus a remainder. |
| 9. $3^{3}-2(5-9)$ | 10. $32÷4\*2-5$ |
| 11. $5\left|3-7\right|-14$ | 12. $0.32+1.047$ |
| 13. $2-0.53$ | 14. $2.3\*8.92$ |
| 15. $22.5÷1.8$ Do not use a remainder. Divide until you reach the complete decimal answer. |  |

**Section 2**

For questions 16-19 simplify.

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| 16. $\frac{14}{9}-\frac{11}{9}$ | 17. $\frac{1}{7}+\frac{3}{5}$ |
| 18. $\frac{5}{9}\*\frac{4}{15}$ | 19. $\frac{2}{11}÷\frac{1}{5}$ |

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| 20. Place $\frac{7}{4}$ on the number line. | 21. Write 5$\frac{2}{3}$ as an improper fraction. |
| 22. Write $-\frac{11}{5}$ as a mixed number. | 23. Fill in the box with the correct symbol (either < or >)$\frac{11}{14} \frac{5}{7}$ |
| 24. Solve. $\frac{1}{3}x-\frac{2}{5}=\frac{7}{10}$ | 25. Solve. $\frac{x}{10}=\frac{5}{4}$ |
| 26. Solve. $\frac{x-2}{5}=\frac{3}{8}$ |  |

**Section 3**

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| 27. Write $\frac{14}{25}$ as a percent.  | 28. Write $28\%$ as a fraction in simplest form.  |
| 29. What is $20\%$ of 85? | 30. A shirt is $25\%$ off of $24. What is the cost after the discount? |

**Section 4**

For questions 31-34 simplify.

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| 31. $(5x)^{2}$ | 32. $(2x^{3})(4x)$ |
| 33. $\frac{14x^{9}}{20x^{6}}$ | 34. Write $0.00043$ in scientific notation.  |

**Section 5**

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| 35. Given rectangle ABCD, $AB=x+7$, $BC=2x$, with a perimeter of 80 units. Find CD. | 36. Given triangle ABC with height AD, $BC=7$, $AD=6$, and $AB=9$. Find the area. ADCB |
| 37. Given parallelogram ABCD, find the area.534ABCD | 38. Given a circle with a diameter of 12, find the area and circumference. Leave your answers in terms of $π$.  |
| 39. Find the volume and surface area of the rectangular prism. mage result for rectangular prismmage result for vertical angles similar triangles | 40. Find the volume and surface area of the cylinder. Leave your answers in terms of $π$.mage result for cylinder |
| Use the diagram below to answer questions 41-44.$$m<CAB=65^{0}, m<ACB=40^{0}, m<CDE=60^{0}$$ADEBC | 41. Find $<DCE$.42. Find $<ACD$.43. Find $<ABC$.44. Is $△ABC\~△EDC$? |

**Section 6**

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| 45. Simplify $4(2x+9y)-3(8x-y)$ | 46. Evaluate $6x^{2}+x-4$ if $x=-2$ |
| 47. Solve. $\frac{x+7}{3}-8=2$ | 48. Solve. $9-2x=5+8x$ |
| 49. Translate the sentence into an algebraic equation and then solve.Twice the sum of a number and 8 is the same as 4 less than the number.  | 50. Solve for a. $ 4a+b=c$. |
| 51. Solve then graph the answer on a number line. $8x-2>14$ | 52. Solve then graph the answer on a number line.$x-3\leq 4$ and $-4x<20$ |
| 53. Solve. $\left|x-2\right|=6$ |  |

**Section 7**

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| 54. a. Graph $y=\frac{2}{3}x-7$b. Write an equation that is perpendicular to $y=\frac{2}{3}x-7$ | 55. Graph. $4x-5y=10$ |
| 56. Graph. $y=-4$ | 57. Graph. $y>-2x+3$ |
| 58. Write a linear equation in slope-intercept form that passes through $(12,5)$ and $(8,-3)$. | 59. Write a linear equation in slope-intercept form given the graph below.  |
| 60. Find the x-intercepts and y-intercepts given $20x+5y=30$ | 61. Solve the system of equations.$$y=7x-4$$$$x+3y=32$$ |
| 62. Solve the system of equations.$$9x-2y=17$$$$3x+4y=-13$$ |  |

**Section 8**

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| 63. Given $A=\left\{1,2,3,4,5\right\}$ and $B=\left\{even integers\right\}$ Find $A∩B$ | 64. Given $f\left(x\right)=4x-9$, find $f(-3)$. |
| Use the diagram below to answer questions 65 and 66.  | 65. Does the graph represent a function?66. Determine the domain and range. |

**Section 9**

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| 67. Simplify $\sqrt{54}$ | 68. Use Pythagorean theorem to find the missing side length. 118 |
| 69. Find the distance between $(7,3)$ and $(-2,1)$. |  |

**Section 10**

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| 70. Simplify $(6x-5)(2x-3)$ | 71. Simplify $\left(x-4\right)^{2}$ |
| 72. Factor $x^{2}-3x-54$ | 73. Factor $3x^{2}+11x+10$ |
| 74. Factor $x^{2}-9$ | 75. Solve using the quadratic formula. $$y=2x^{2}+9x+3$$ |
| 76. Graph $y=x^{2}+6x+10$ |  |