**Practice exam**

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| 1. | Add the polynomials. Match your result to the correct answer below. | |
| A) | 7*x*2 + 5*x* – 5 |
| B) | *x*2 + 5*x* – 5 |
| C) | *x*2 – *x* – 1 |
| D) | 2*x*2 + 7*x*2 + 5*x* – 5 |

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| 2. | Perform the indicated operation. Match your result to the correct answer below.  (2 – 3*x* + *x*3) – (–1 – 4*x* + *x*2) | |
| A) | *x*3 – *x*2 + *x* + 3 |
| B) | *x*3 – *x*2 – 7*x* + 3 |
| C) | *x*3 – *x*2 – *x* + 1 |
| D) | *x*3 + *x*2 + *x* – 3 |

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| 3. | Find the product and match your result to the correct answer below.  –2*ab*·7*a*5*b*4 | |
| A) | –14*a*5*b*4 |
| B) | –14*a*6*b*5 |
| C) | 5*a*6*b*5 |
| D) | –14*a*7*b*5 |

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| 4. | Find the opposite of the polynomial and match your result to the correct answer below.  –2*r*2 – *r* + 3 | |
| A) | 2*r*2 + *r* – 3 |
| B) | 2*r*2 – *r* + 3 |
| C) | 2*r*2 + *r* + 3 |
| D) | 3 – *r* – 2*r*2 |

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| 5. | Find the product and match your result to the correct answer below:  (*x* – 3)(*x* – 5) | |
| A) |  |
| B) |  |
| C) |  |
| D) |  |

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| 6. | Multiply: (–4– *a*)2 | |
| A) | *a*2 – 8*a* + 16 |
| B) | *a*2 – 8*a* – 16 |
| C) | *a*2 + 8*a* + 16 |
| D) | *a*2 + 8*a* + 4 |

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| 7. | Simplify: | |
| A) |  |
| B) |  |
| C) |  |
| D) |  |

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| 8. | Find the quotient and the remainder. Match your result to the correct answer below. | |
| A) |  |
| B) |  |
| C) |  |
| D) |  |

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| 9. | Simplify and match your result to the correct answer below. | |
| A) |  |
| B) |  |
| C) |  |
| D) |  |

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| 10. | Write without negative exponents: | |
| A) |  |
| B) |  |
| C) |  |
| D) |  |

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| 11. | Factor out the greatest common factor and match your result to the correct answer below.  3*x*4 – 6*x*3 – 15*x*2 | |
| A) | 3*x*2(*x*2 – 2*x* – 5) |
| B) | 3*x*2(*x*4 – 2*x*3 – 5*x*2) |
| C) | 3*x*(*x*3 – 2*x*2 – 5*x*) |
| D) | *x*2(3*x*2 – 6*x* – 15) |

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| 12. | Factor completely: 12*p*2 + 20*p* | |
| A) | 2(6*p*2 + 10) |
| B) | 4*p*(3*p* + 20) |
| C) | 4*p*(3*p* + 5) |
| D) | 6*p*(2*p* + 5) |
| 13. | Factor and match your result to the correct answer below.  *z*2 – 12*wz* + 13*w*2 | |
| A) | (*z* + *w*)(*z* – 13*w*) |
| B) | (*z* – *w*)(*z* – 13*w*) |
| C) | (*z* – *w*)(*z* + 13*w*) |
| D) | The polynomial is prime. |

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| 14. | Factor completely and match your result to the correct answer below.  12*y*2 + 2*y* – 2 | |
| A) | (3*y* – 2)(4*y* + 1) |
| B) | (12*y* – 1)(*y* + 2) |
| C) | (3*y* + 2)(4*y* – 1) |
| D) | 2(3*y* – 1)(2*y* + 1) |

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| 15. | Factor: 64*y*3 – 125*z*3 | |
| A) | (4*y* – 5*z*)(16*y*2 – 20*yz* + 25*z*2) |
| B) | (4*y* + 5*z*)(16*y*2 – 20*yz* + 25*z*2) |
| C) | (4*y* – 5*z*)(16*y*2 + 20*yz* + 25*z*2) |
| D) | (4*y* – 5*z*)(4*y*2 + 20*yz* + 5*z*2) |

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| 16. | Solve the given equation and match your result to the correct answer below.  *x*2 + *x* – 6 = 0 | |
| A) | –3, –2 |
| B) | 3, –2 |
| C) | –6, 1 |
| D) | –3, 2 |

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| 17. | Reduce the given expression to lowest terms. | |
| A) |  |
| B) |  |
| C) |  |
| D) |  |

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| 18. | Perform the indicated operations and write your result *in lowest terms*. Match your result to the correct answer below. | |
| A) | 2 |
| B) |  |
| C) |  |
| D) |  |

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| 19. | Perform the indicated operations and write your result in lowest terms. Match your result to the correct answer below. | |
| A) |  |
| B) |  |
| C) |  |
| D) |  |
| 23. | Solve the equation for y and match your result to the correct answer below. | |
| A) | *y* = 2*x* + 2 |
| B) | *y* = 3*x* + 2 |
| C) | *y* = 2*x* – 3 |
| D) | *y* = 2*x* + 7 |

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| 24. | Find the root: | |
| A) | z |
| B) | *z15* |
| C) | *z5* |
| D) | *z*4 |

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| 25. | Simplify: | |
| A) |  |
| B) |  |
| C) |  |
| D) |  |

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| 26. | Write the expression using exponent notation. | |
| A) |  |
| B) | 25*z*2 |
| C) |  |
| D) | 5*z*2 |

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| 27. | Write the expression using radical notation. | |
| A) |  |
| B) |  |
| C) |  |
| D) |  |

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| 28. | Simplify: | |
| A) |  |
| B) |  |
| C) |  |
| D) |  |

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| 29. | Find the product: | |
| A) |  |
| B) |  |
| C) | 29 |
| D) | 12 |

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| 30. | Simplify: | |
| A) |  |
| B) | 5 |
| C) |  |
| D) |  |

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| 31. | Simplify: | |
| A) | 4 |
| B) |  |
| C) |  |
| D) |  |
| 32. | Find all real solutions: *x*2 = 81 | |
| A) | {9} |
| B) | {–9} |
| C) | {–9, 9} |
| D) |  |

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| 33. | Solve: | |
| A) |  |
| B) |  |
| C) |  |
| D) |  |

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| 34. | Solve: 3*x*2 + 5 = 11 | |
| A) |  |
| B) |  |
| C) |  |
| D) |  |

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| 35. | Solve by factoring: | |
| A) | {5} |
| B) |  |
| C) |  |
| D) | {0, 5} |

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| 36. | Solve: | |
| A) |  |
| B) |  |
| C) |  |
| D) |  |

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| 37. | Find the perfect square trinomial whose first two terms are *q*2 + 7*q*. Match your result to the correct answer below. | |
| A) |  |
| B) |  |
| C) |  |
| D) |  |

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| 38. | Solve using the quadratic formula: | |
| A) |  |
| B) |  |
| C) |  |
| D) |  |