

Name:

Math Academy 1

Date:

Review 1 Version A

[A] Circle whether each statement is true or false.

T F 1. $2s^{-1} = \frac{1}{2s}$

T F 2. $\frac{a^5b^5}{a^5b^5} = b^{-10}$

T F 3. $6 \times \frac{1}{7} = \frac{6}{42}$

T F 4. $\left(\frac{h^3}{10q^9}\right)^{-1} = \left(\frac{10q^9}{h^3}\right)$

T F 5. $8 + 2\sqrt{x} = 10\sqrt{x}$

T F 6. $1 - .04\% = .9996$

T F 7. $\sqrt{9x^2 + 25} = 3x + 5$

T F 8. $(3x + 5)^2 = 9x^2 + 25$

T F 9. $(24 \cos 8x) \div 2 = 12 \cos 4x$

T F 10. $(x^2 + 10x + 21) \div (x + 3) = x + 7$

T F 11. $(7 \times 10^{29}) + (4 \times 10^{28}) = 7.4 \times 10^{29}$

T F 12. The leading coefficient of $9x - \frac{x^2}{4}$ is $-\frac{1}{4}$.

T F 13. The value of 0.18^{30} is between 4 and 5.

T F 14. $(10x^3 - 5x) - (14x^2 - 2x) = 10x^3 - 14x^2 - 3x$

T F 15. The expression $-12x^2$ is a quadratic monomial.

T F 16. The expression $9x + 20 \cos 4x$ has three terms.

T F 17. In the expression $8x + \sqrt{x+2}$, $x+2$ is the argument of the square root function.

T F 18. $A = 229 \times 10^{16}$ and $B = 2.29 \times 10^{18}$ are equal, but only B is written in scientific notation.

[B] State the degree of the following polynomials, given Q is quadratic and C is cubic.

1. $Q + C$

2. $Q - C$

3. QC

4. $C \div C$

5. $2C + Q$

6. Q^3

7. Q^0

8. $(CQ^2)^5$

[C] Simplify completely. Write answers without parentheses or negative exponents.

1. $\frac{18a^2\sqrt{6b}}{9ab^4 + 6ab^3}$

2. $6x(3x^5)^{-2}$

3. $-2(4x - 5)^2$

4. $3acd^{-1}\left(\frac{12a^5}{16b^{-4}}\right)^{-2}$

5. $-6\left(\frac{x-8}{9} + \frac{\sqrt{2x}}{2}\right)$

6. $10x^3(x + 1)(x + 4)(x - 4)$

[D] Solve. Show exact answers, and then round to the nearest hundredth.

1. $\frac{1}{4}(8x - 13) = 9x + 6$

2. $3x^2 = 11$

[D] Optional

1. Do another version (B, C, or D) of this review.

Name:

Math Academy 1

Date:

Review 1 Version B

[A] Circle whether each statement is true or false.

T F 1. $2s^{-1} = \frac{1}{2s}$

T F 2. $\frac{a^5b^5}{a^5b^5} = b^{-10}$

T F 3. $6 \times \frac{1}{7} = \frac{6}{42}$

T F 4. $\left(\frac{h^3}{10q^9}\right)^{-1} = \left(\frac{10q^9}{h^3}\right)$

T F 5. $8 + 2\sqrt{x} = 10\sqrt{x}$

T F 6. $1 - .04\% = .9996$

T F 7. $\sqrt{9x^2 + 25} = 3x + 5$

T F 8. $(3x + 5)^2 = 9x^2 + 25$

T F 9. $(24 \cos 8x) \div 2 = 12 \cos 4x$

T F 10. $(x^2 + 10x + 21) \div (x + 3) = x + 7$

T F 11. $(7 \times 10^{29}) + (4 \times 10^{28}) = 7.4 \times 10^{29}$

T F 12. The leading coefficient of $9x - \frac{x^2}{4}$ is $-\frac{1}{4}$.

T F 13. The value of 0.18^{30} is between 4 and 5.

T F 14. $(10x^3 - 5x) - (14x^2 - 2x) = 10x^3 - 14x^2 - 3x$

T F 15. The expression $-12x^2$ is a quadratic monomial.

T F 16. The expression $9x + 20 \cos 4x$ has three terms.

T F 17. In the expression $8x + \sqrt{x+2}$, $x+2$ is the argument of the square root function.

T F 18. $A = 229 \times 10^{16}$ and $B = 2.29 \times 10^{18}$ are equal, but only B is written in scientific notation.

[B] State the degree of the following polynomials, given Q is quadratic and C is cubic.

1. $Q + C$

2. $Q - C$

3. QC

4. $C \div C$

5. $2C + Q$

6. Q^3

7. Q^0

8. $(CQ^2)^5$

[C] Simplify completely. Write answers without parentheses or negative exponents.

1. $\frac{18a^8b\sqrt{6b}}{45ab^4 + 12a^9b^3}$

2. $6x^{-4}(3x^5)^{-2}$

3. $-3x^3(4x - 5)^2$

4. $3acd^{-2}\left(\frac{18a^5}{16b^4}\right)^{-3}$

5. $-6\left(\frac{x-8}{9} + \frac{\sqrt{2x}}{6}\right)$

6. $10x^3(x + 1)(x + 2)(x - 4)$

[D] Solve. Show exact answers, and then round to the nearest hundredth.

1. $\frac{3}{4}(8x - 13) = 9x + 6$

2. $3x^2 - 2 = 11$

[E] Optional

1. Find four polynomials A , B , C , and D , each with integer coefficients only, such that $A \times B$ and $C \times D$ are both equal to the given polynomial.

a) $x^3 + 12x^2 + 35x$

Name:

Math Academy 1

Date:

Review 1 Version C

[A] Circle whether each statement is true or false.

T F 1. $2s^{-1} = \frac{1}{2s}$

T F 2. $\frac{a^5b^5}{a^5b^5} = b^{-10}$

T F 3. $6 \times \frac{1}{7} = \frac{6}{42}$

T F 4. $\left(\frac{h^3}{10q^9}\right)^{-1} = \left(\frac{10q^9}{h^3}\right)$

T F 5. $8 + 2\sqrt{x} = 10\sqrt{x}$

T F 6. $1 - .04\% = .9996$

T F 7. $\sqrt{9x^2 + 25} = 3x + 5$

T F 8. $(3x + 5)^2 = 9x^2 + 25$

T F 9. $(24 \cos 8x) \div 2 = 12 \cos 4x$

T F 10. $(x^2 + 10x + 21) \div (x + 3) = x + 7$

T F 11. $(7 \times 10^{29}) + (4 \times 10^{28}) = 7.4 \times 10^{29}$

T F 12. The leading coefficient of $9x - \frac{x^2}{4}$ is $-\frac{1}{4}$.

T F 13. The value of 0.18^{30} is between 4 and 5.

T F 14. $(10x^3 - 5x) - (14x^2 - 2x) = 10x^3 - 14x^2 - 3x$

T F 15. The expression $-12x^2$ is a quadratic monomial.

T F 16. The expression $9x + 20 \cos 4x$ has three terms.

T F 17. In the expression $8x + \sqrt{x+2}$, $x+2$ is the argument of the square root function.

T F 18. $A = 229 \times 10^{16}$ and $B = 2.29 \times 10^{18}$ are equal, but only B is written in scientific notation.

[B] State the degree of the following polynomials, given Q is quadratic and C is cubic.

1. $Q + C$

2. $Q - C$

3. QC

4. $C \div C$

5. $2C + Q$

6. Q^3

7. Q^0

8. $(CQ^2)^5$

[C] Simplify completely. Write answers without parentheses or negative exponents.

1. $\frac{18a^8 + 3a^{11}b\sqrt{6b}}{45a^4b + 12a^9b^3}$

2. $6x^{-4}(1/4x^5)^{-2}$

3. $-3x^3(4x^2 - 5)^2$

4. $-3acd^{-2}\left(\frac{18a^5}{22b^4}\right)^{-3}$

5. $-6\left(\frac{x-8}{9} + \frac{\sqrt{2x}}{-6}\right)$

6. $10x^3(x+1)(x+2)(2x-4)$

[D] Solve. Show exact answers, and then round to the nearest thousandth.

1. $\frac{3}{4}(8x - 13) = 8x + 6$

2. $3x^2 - 2 = x^2$

[E] Optional

1. Find four polynomials A , B , C , and D , each with integer coefficients only, such that $A \times B$ and $C \times D$ are both equal to the given polynomial.

a) $x^3 + 14x^2 + 24x$

Name:

Math Academy 1

Date:

Review 1 Version D

[A] Circle whether each statement is true or false.

T F 1. $2s^{-1} = \frac{1}{2s}$

T F 2. $\frac{a^5b^5}{a^5b^5} = b^{-10}$

T F 3. $6 \times \frac{1}{7} = \frac{6}{42}$

T F 4. $\left(\frac{h^3}{10q^9}\right)^{-1} = \left(\frac{10q^9}{h^3}\right)$

T F 5. $8 + 2\sqrt{x} = 10\sqrt{x}$

T F 6. $1 - .04\% = .9996$

T F 7. $\sqrt{9x^2 + 25} = 3x + 5$

T F 8. $(3x + 5)^2 = 9x^2 + 25$

T F 9. $(24 \cos 8x) \div 2 = 12 \cos 4x$

T F 10. $(x^2 + 10x + 21) \div (x + 3) = x + 7$

T F 11. $(7 \times 10^{29}) + (4 \times 10^{28}) = 7.4 \times 10^{29}$

T F 12. The leading coefficient of $9x - \frac{x^2}{4}$ is $-\frac{1}{4}$.

T F 13. The value of 0.18^{30} is between 4 and 5.

T F 14. $(10x^3 - 5x) - (14x^2 - 2x) = 10x^3 - 14x^2 - 3x$

T F 15. The expression $-12x^2$ is a quadratic monomial.

T F 16. The expression $9x + 20 \cos 4x$ has three terms.

T F 17. In the expression $8x + \sqrt{x+2}$, $x+2$ is the argument of the square root function.

T F 18. $A = 229 \times 10^{16}$ and $B = 2.29 \times 10^{18}$ are equal, but only B is written in scientific notation.

[B] State the degree of the following polynomials, given Q is quadratic and C is cubic.

1. $Q + C$

2. $Q - C$

3. QC

4. $C \div C$

5. $2C + Q$

6. Q^3

7. Q^0

8. $(CQ^2)^5$

[C] Simplify completely. Write answers without parentheses or negative exponents.

1. $\frac{18a^8 + 3a^{11}b\sqrt{9a^2}}{45a^4b + 12a^9b^3}$

2. $6x^{-4}(3/4x^5)^{-2}$

3. $-3x^3(4x^3 - 5x^2)^2$

4. $-3a^4c^0d^{-2}\left(\frac{-18a^5}{60b^4}\right)^{-3}$

5. $-6\left(\frac{x-8}{9} + \frac{\sqrt{2x}}{-6x}\right)$

6. $10x^3(x+1)(x+2)(2x^2-4)$

[D] Solve. Show exact answers, and then round to the nearest hundredth.

1. $\frac{3}{4}(7x - 13) = 8x + 8$

2. $3(x + 1)^2 - 2 = 11$

[E] Optional

1. Find four polynomials A , B , C , and D , each with integer coefficients only, such that $A \times B$ and $C \times D$ are both equal to the given polynomial.

a) $24x^6 + 10x^4 - 21x^2$