

Kennedy Catholic High School Math Placement Exam Practice Test

First and Last Name Answer Key (work not shown)

Part 1 (no calculator)

A calculator is not allowed for this portion of the test. Show your work. Communicating your thought process is just as important as obtaining correct answers. You have 15 minutes to complete Part 1.

<p>1. Find the greatest common factor of the set of numbers.</p> <p style="text-align: center;">36 and 54</p> <div style="border: 1px solid black; width: 80px; margin: 20px auto; text-align: center; padding: 5px;">18</div>	<p>2. Write $6\frac{1}{4}$ as an improper fraction.</p> <div style="border: 1px solid black; width: 80px; margin: 20px auto; text-align: center; padding: 5px;">$\frac{25}{4}$</div>	<p>3. Write $\frac{45}{7}$ as a mixed number.</p> <div style="border: 1px solid black; width: 80px; margin: 20px auto; text-align: center; padding: 5px;">$6\frac{3}{7}$</div>
<p>4. Add or subtract. Write your answer as a fraction or mixed number in reduced form.</p> <p style="text-align: center;">$\frac{3}{11} - \frac{7}{11}$</p> <div style="border: 1px solid black; width: 80px; margin: 20px auto; text-align: center; padding: 5px;">$-\frac{4}{11}$</div>	<p>5. Add or subtract. Write your answer as a fraction or mixed number in reduced form.</p> <p style="text-align: center;">$\frac{5}{4} + \frac{2}{5}$</p> <div style="border: 1px solid black; width: 80px; margin: 20px auto; text-align: center; padding: 5px;">$\frac{33}{20}$</div> <p style="text-align: center;">or $1\frac{13}{20}$</p>	<p>6. Compare the pair of numbers using the symbol $<$, $>$, or $=$.</p> <p style="text-align: center;">0.00059 ? 0.0017</p> <div style="border: 1px solid black; width: 80px; margin: 20px auto; text-align: center; padding: 5px; height: 30px;"><</div>
<p>7. Compare the pair of numbers using the symbol $<$, $>$, or $=$.</p> <p style="text-align: center;">-7.35 ? -7.12</p> <div style="border: 1px solid black; width: 80px; margin: 20px auto; text-align: center; padding: 5px; height: 30px;"><</div>	<p>8. Multiply. Write your answer as a fraction or mixed number in reduced form.</p> <p style="text-align: center;">$\frac{3}{13} \times \frac{4}{5}$</p> <div style="border: 1px solid black; width: 80px; margin: 20px auto; text-align: center; padding: 5px;">$\frac{12}{65}$</div>	<p>9. Divide. Write your answer as a fraction or mixed number in reduced form.</p> <p style="text-align: center;">$\frac{4}{9} \div \frac{8}{3}$</p> <div style="border: 1px solid black; width: 80px; margin: 20px auto; text-align: center; padding: 5px;">$\frac{1}{6}$</div>

<p>10. Add/subtract to simplify the expression.</p> $-8 - 14 + 19$ <div style="text-align: right; border: 1px solid black; padding: 2px; width: fit-content; margin-left: auto;">-3</div>	<p>11. Add/subtract to simplify the expression.</p> $26 - 9 - (-6)$ <div style="text-align: right; border: 1px solid black; padding: 2px; width: fit-content; margin-left: auto;">23</div>	<p>12. Multiply/divide to simplify the expression.</p> $(-5)(-3)(-2)$ <div style="text-align: right; border: 1px solid black; padding: 2px; width: fit-content; margin-left: auto;">-30</div>
<p>13. Multiply/divide to simplify the expression.</p> $\frac{(-75)(3)}{-5}$ <div style="text-align: right; border: 1px solid black; padding: 2px; width: fit-content; margin-left: auto;">45</div>	<p>14. Use order of operations to simplify the expression.</p> $6 \div 3 \cdot 2 - 2$ <div style="text-align: right; border: 1px solid black; padding: 2px; width: fit-content; margin-left: auto;">2</div>	<p>15. Use order of operations to simplify the expression.</p> $(7 - 2)^2 - 10 \div 5$ <div style="text-align: right; border: 1px solid black; padding: 2px; width: fit-content; margin-left: auto;">23</div>
<p>16. Simplify each expression.</p> <p>a. $6^2 =$ 36</p> <p>a. $-6^2 =$ -36</p> <p>a. $(-6)^2 =$ 36</p> <p>a. $-(-6)^2 =$ -36</p>	<p>17. Write $12^8 \cdot 12^{15}$ as a single base raised to a single power.</p> <div style="text-align: right; border: 1px solid black; padding: 2px; width: fit-content; margin-left: auto;">12^{23}</div>	<p>18. Simplify the radical expression. Give the answer in reduced radical form, if necessary.</p> $\sqrt{75}$ <div style="text-align: right; border: 1px solid black; padding: 2px; width: fit-content; margin-left: auto;">$5\sqrt{3}$</div>

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Part 2

A calculator is allowed for this portion of the test. Show your work. Communicating your thought process is just as important as obtaining correct answers. You have 60 minutes to complete Part 2.

<p>1. If 9 pounds of jellybeans cost \$6.30, how much will 5 pounds of jellybeans cost?</p> <p style="text-align: right;"><input type="text" value="\$3.50"/></p>	<p>2. Write an algebraic expression for the phrase.</p> <p style="text-align: center;">Twelve more than a number</p> <p style="text-align: right;"><input type="text" value="n + 12"/></p>
<p>3. Write an algebraic expression for the phrase.</p> <p style="text-align: center;">The product of 7 and the cube of a number</p> <p style="text-align: right;"><input type="text" value="7n^3"/></p>	<p>4. Evaluate the expression for $a = 4, b = 2, c = 8$.</p> <p style="text-align: center;">$b - (3a + c)$</p> <p style="text-align: right;"><input type="text" value="-18"/></p>
<p>5. Carlos has \$250 to spend. He bought an Xbox for \$190.00. How many games can he buy if each game costs \$7.00?</p> <p style="text-align: right;"><input type="text" value="8"/></p>	<p>6. Simplify the algebraic expression.</p> <p style="text-align: center;">$(2x^2 + 7x - 3) + (x^2 - 5x - 1)$</p> <p style="text-align: right;"><input type="text" value="3x^2 + 2x - 4"/></p>
<p>7. Simplify the algebraic expression.</p> <p style="text-align: center;">$(x + y) - (2x - 7)$</p> <p style="text-align: right;"><input type="text" value="-x + y + 7"/></p>	<p>8. Simplify the algebraic expression.</p> <p style="text-align: center;">$3x(2x - 4)$</p> <p style="text-align: right;"><input type="text" value="6x^2 - 12x"/></p>

9. Simplify the algebraic expression.

$$(x - 11)(4x + 6)$$

$$4x^2 - 38x - 66$$

10. Simplify the exponential expression, writing the answer using only positive exponents.

$$\frac{w^0 x^{10} x^2 y^6 z^{-2}}{y^2 z^{-4}}$$

$$x^{12} y^4 z^2$$

11. Simplify the exponential expression, writing the answer using only positive exponents.

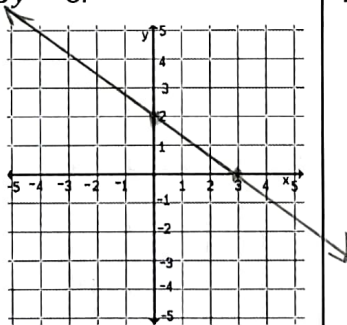
$$(p^2)^3$$

$$p^6$$

12. Find the slope of the line that passes through the points $(-2, -7)$ and $(6, -5)$.

$$\frac{1}{4}$$

13. Graph the line $2x + 3y = 6$.



14. Tell if $(2, -3)$ is a solution to the equation $3x - 4y = 18$ (circle yes or no). Show how you determined your answer.

yes no

15. Write an equation in slope-intercept form, $y = mx + b$, for the line that passes through the points $(0, 5)$ and $(2, -1)$.

$$y = -3x + 5$$

16. John read three-fourths of a book and is now on page 90. How many pages are in the book altogether?

$$120$$

17. Solve the equation.

$$7x = 2(5x - 12)$$

$$x = 8$$

18. Solve the equation.

$$2\sqrt{3x + 1} = 14$$

$$x = 16$$

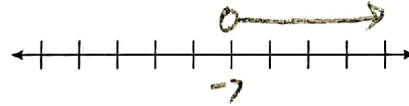
19. Solve the equation.

$$|x - 2| = 7$$

$$-5 \text{ or } 9$$

20. Solve and graph the inequality.

$$-5x < 35$$



$$x > -7$$

21. Solve and graph the inequality.

$$3x - 8 \geq 6x - 14$$



$$x \leq 2$$

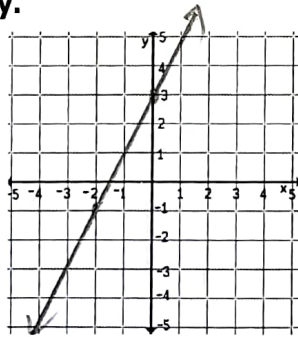
22. Solve the equation for m.

$$p = 4(3 + m) - 5r$$

$$m = \frac{p + 5r}{4} - 3$$

23. Graph the inequality.

$$y > \frac{4}{3}x + 3$$



24. Solve the proportion.

$$\frac{3}{4} = \frac{4x + 1}{12}$$

$$x = 2$$

25. Solve the linear system.

$$\begin{aligned} 2x - 3y &= 5 \\ x + 2y &= -1 \end{aligned}$$

$$\begin{aligned} x &= 1 \\ y &= -1 \end{aligned}$$

26. Factor the quadratic expression.

$$14xy^2 - 2xy$$

$$2xy(7y - 1)$$

27. Factor the quadratic expression.

$$x^2 + 7x + 12$$

$$(x + 3)(x + 4)$$

28. Factor and simplify the expression.

$$\frac{x^2 + 2x - 8}{x + 4}$$

$$x - 2$$

Quadratic Formula: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

29. Use factoring or the Quadratic Formula to solve the equation.

$$16x^2 - 25 = 0$$

$$x = \pm \frac{5}{4}$$

30. Use factoring or the Quadratic Formula to solve the equation.

$$x^2 - 16 = 6x$$

$$-20 \pm 8$$

31. Graph the quadratic function. Clearly show the vertex and all intercepts of the graph.

$$y = x^2 - 4$$

