Chapter 7 Test: Find the Error(s)

Check your Canvas email. You have been assigned five problems to do. **DO NOT COMPLETE ALL PROBLEMS IN THIS TEST**. Only complete the problems that were assigned to you.

For each problem number, you will see a math problem followed by a student's solution to that problem. Your task is to find the error(s) in the student's solution, if any.

Hint: If you solve each problem yourself before looking at the student's work, then compare your work to the student's work, it will be easier to find any error(s) made by the student.

1. Find the error(s), if any:

Problem:

Add. Simplify your answer. Type your answer in the form $a + bi$.

$(8 - 6i) + (3 + 3i)$

Student's Solution:

$(8 - 6i) + (3 + 3i)$

Using FOIL, …

$24 + 24i - 18i - 18i^2$

$24 + 6i - 18(-1)$

$24 + 6i + 18$

$42 + 6i$

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

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2. Find the error(s), if any:

Problem:

Use radical notation to write the expression. Simplify if possible. Type an exact answer, using radicals as needed.

$(-8)^{\frac{2}{3}}$

Student's Solution:

$(-8)^{\frac{2}{3}} = \left(\sqrt[3]{-8}\right)^2 = (-2)^2 = \boxed{4}$

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

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3. Find the error(s), if any:

Problem:

Find the midpoint of the line segment whose endpoints are given. Type an ordered pair.
$(10,5)$ and $(-3,-5)$

Student's Solution:

$(10,5)$ and $(-3,-5)$

x_1 y_1 x_2 y_2

Midpoint = $\left(\frac{x_2-x_1}{2},\frac{y_2-y_1}{2}\right)$ = $\left(\frac{-3-10}{2},\frac{-5-5}{2}\right)$ = $\left(\frac{-13}{2},\frac{-10}{2}\right)$ = $\left(\frac{-13}{2},-5\right)$

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

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4. Find the error(s), if any:

Problem:

Solve. Simplify your answer. Use a comma to separate answers as needed.

$x - \sqrt{2 - x} = -4$

Student's Solution:

$x - \sqrt{2 - x} = -4$

$(x)^2 - \left(\sqrt{2 - x}\right)^2 = -4$

$x^2 - (2 - x) = -4$

$x^2 - 2 + x = -4$

$x^2 + x - 2 = 0$

$(x + 2)(x - 1) = 0$

$x + 2 = 0$ or $x - 1 = 0$

$x = -2$ or $x = 1$

Check $x = -2$

$-2 - \sqrt{2 - (-2)} = -4$

$-2 - \sqrt{2 + 2} = -4$

$-2 - \sqrt{4} = -4$

$-2 - 2 = -4$

$-4 = -4$ ✓

$x = -2$

Check $x = 1$

$1 - \sqrt{2 - 1} = -4$

$1 - \sqrt{1} = -4$

$1 - 1 = -4$

$0 = -4$ ×

$x = 1$ is extraneous

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

For each problem number, you will see a math problem followed by a student's solution to that problem. Your task is to find the error(s) in the student's solution, if any.

5. Find the error(s), if any:

Problem:

Divide. Simplify your answer. Type your answer in the form $a + bi$. Use integers or fractions for any numbers in the expression.

$$\frac{8}{9+i}$$

Student's Solution:

$$\frac{8}{9+i} = \frac{8}{9+(-1)} = \frac{8}{8} = 1$$

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

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6. Find the error(s), if any:

Problem:

Simplify.

$\sqrt[5]{64x^{10}y^6}$

Student's Solution:

$$\sqrt[5]{64x^{10}y^6} = \sqrt[5]{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot y \cdot y \cdot y \cdot y \cdot y \cdot y}$$

$$= 2 \cdot x \cdot x \cdot y \cdot \sqrt[5]{y} = 2x^2y \cdot \sqrt[5]{y}$$

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

For each problem number, you will see a math problem followed by a student's solution to that problem. Your task is to find the error(s) in the student's solution, if any.

7. Find the error(s), if any:

Problem:

Rationalize the denominator. Assume that all variables represent positive real numbers. Simplify your answer. Type an exact answer, using radicals as needed.

$$\frac{-3}{\sqrt{x}-4}$$

Student's Solution:

$$\frac{-3}{\sqrt{x}-4} = \frac{-3}{\sqrt{x}-4}\cdot\frac{\sqrt{x}+4}{\sqrt{x}+4} = \frac{-3(\sqrt{x}+4)}{(\sqrt{x}-4)(\sqrt{x}+4)} = \frac{-3\sqrt{x}-12}{\sqrt{x}\cdot\sqrt{x}+\sqrt{x}\cdot 4-4\cdot\sqrt{x}-4\cdot 4} = \frac{-3\sqrt{x}-12}{\sqrt{x\cdot x}+4\sqrt{x}-4\sqrt{x}-16}$$

$$= \frac{-3\sqrt{x}-12}{x-16}$$

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

For each problem number, you will see a math problem followed by a student's solution to that problem. Your task is to find the error(s) in the student's solution, if any.

8. Find the error(s), if any:

Problem:

Use the properties of exponents to simplify the expression. Write with positive exponents. Assume that all variables represent positive real numbers.

$x^{-\frac{3}{4}} \cdot x^{\frac{7}{4}}$

Student's Solution:

$$x^{-\frac{3}{4}} \cdot x^{\frac{7}{4}} = x^{\left(-\frac{3}{4} \cdot \frac{7}{4}\right)} = x^{-\frac{21}{16}} = \frac{1}{x^{\frac{21}{16}}}$$

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

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9. Find the error(s), if any:

Problem:

Find the root of $\sqrt[5]{-1}$.

Student's Solution:

Because $(-1)(-1)(-1)(-1)(-1) = -1$, $\sqrt[5]{-1} = -1$

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

For each problem number, you will see a math problem followed by a student's solution to that problem. Your task is to find the error(s) in the student's solution, if any.

10. Find the error(s), if any:

Problem:

Add and subtract. Assume that all variables represent positive real numbers. Simplify your answer. Type an exact answer, using radicals as needed.

$-\sqrt[4]{x^9}+5\cdot\sqrt[4]{81x^9}-3x^2\cdot\sqrt[4]{x}$

Student's Solution:

$-\sqrt[4]{x^9}+5\cdot\sqrt[4]{81x^9}-3x^2\cdot\sqrt[4]{x}$

$= -\sqrt[4]{x\cdot x\cdot x\cdot x}\cdot\sqrt[4]{x\cdot x\cdot x\cdot x}\cdot x+5\cdot\sqrt[4]{3\cdot 3\cdot 3\cdot 3}\cdot\sqrt[4]{x\cdot x\cdot x\cdot x}\cdot\sqrt[4]{x\cdot x\cdot x\cdot x}\cdot x-3x^2\cdot\sqrt[4]{x}$

$= -1\cdot x\cdot x\cdot\sqrt[4]{x}\ +\ 5\cdot 3\cdot x\cdot x\cdot\sqrt[4]{x}\ -\ 3x^2\cdot\sqrt[4]{x}$

$= -x^2\cdot\sqrt[4]{x}\ +\ 15x^2\cdot\sqrt[4]{x}\ -\ 3x^2\cdot\sqrt[4]{x}$

$=11x^2\cdot\sqrt[4]{x}$

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

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11. Find the error(s), if any:

Problem:

Solve. Simplify your answer. Use a comma to separate answers as needed.

$\sqrt{9x+1}+8=0$

Student's Solution:

$\sqrt{9x+1}+8=0$

$\sqrt{9x+1}=-8$

$\left(\sqrt{9x+1}\right)^2=(-8)^2$

$9x+1=64$

$9x=63$

$x=7$

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

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12. Find the error(s), if any:

Problem:

Use a calculator to approximate the square root. Check to see that the approximation is reasonable. Round to the nearest thousandth as needed.

$\sqrt{301}$

Student's Solution:

$\sqrt{301} \approx \boxed{17.3}$

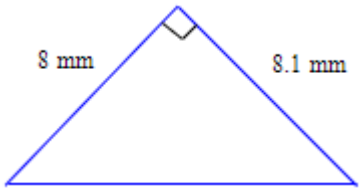
Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

For each problem number, you will see a math problem followed by a student's solution to that problem. Your task is to find the error(s) in the student's solution, if any.

13. Find the error(s), if any:

Problem:

Find the length of the unknown side of each triangle. Give the exact length and an approximate length. Round to one decimal place as needed. Simplify your answer. For the exact length, use radicals as needed. For the approximate length, use integers or decimals for any numbers in the expression.



Student's Solution:

$a^2 + b^2 = c^2$

$8^2 + 8.1^2 = c^2$

$64 + 65.61 = c^2$

$129.61 = c^2$

$c = \pm\sqrt{129.61}$

But a distance cannot be negative, so $c = \sqrt{129.61}$ (exact answer) and $c \approx 11.4$ (approximate answer)

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

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14. Find the error(s), if any:

Problem:

Find the distance between the pair of points. Type an exact answer, using radicals as needed.

$(-9,8)$ and $(0,4)$

Student's Solution:

$(-9,8)$ and $(0,4)$

x_1 y_1 x_2 y_2

Distance = $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ = $\sqrt{(0 - 9)^2 + (4 - 8)^2}$ = $\sqrt{(-9)^2 + (-4)^2}$

= $\sqrt{81 + 16}$ = $\boxed{\sqrt{97}}$

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

For each problem number, you will see a math problem followed by a student's solution to that problem. Your task is to find the error(s) in the student's solution, if any.

15. Find the error(s), if any:

Problem:

Use the properties of exponents to simplify each expression. Write with positive exponents. Assume that all variables represent positive real numbers. Simplify your answer.

$$\frac{(x^3y^6)^{\frac{1}{6}}}{(x^{-5}y^{-3})^{-\frac{1}{3}}}$$

Student's Solution:

$$\frac{(x^3y^6)^{\frac{1}{6}}}{(x^{-5}y^{-3})^{-\frac{1}{3}}} = \frac{(x^3)^{\frac{1}{6}}(y^6)^{\frac{1}{6}}}{(x^{-5})^{-\frac{1}{3}}(y^{-3})^{-\frac{1}{3}}} = \frac{x^{\left(3\cdot\frac{1}{6}\right)}.y^{\left(6\cdot\frac{1}{6}\right)}}{x^{\left(-5\cdot-\frac{1}{3}\right)}.y^{\left(-3\cdot-\frac{1}{3}\right)}} = \frac{x^{\left(\frac{1}{2}\right)}.y^{(1)}}{x^{\left(\frac{5}{3}\right)}.y^{(1)}} = x^{\left(\frac{1}{2}-\frac{5}{3}\right)} = x^{\left(\frac{1-5}{2-3}\right)} = \boxed{x^4}$$

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

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16. Find the error(s), if any:

Problem:

Multiply. Then simplify if possible. Type an exact answer, using radicals as needed.

$(\sqrt[3]{36}+3)(\sqrt[3]{6}-2)$

Student's Solution:

$(\sqrt[3]{36}+3)(\sqrt[3]{6}-2)$

Using FOIL, …

$\sqrt[3]{36}\cdot\sqrt[3]{6}-\ \sqrt[3]{36}\cdot 2+3\cdot\sqrt[3]{6}-3\cdot 2$

$\sqrt[3]{36\cdot 6}-2\sqrt[3]{36}+3\sqrt[3]{6}-6$

$\sqrt[3]{216}-2\sqrt[3]{36}+3\sqrt[3]{6}-6$

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

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17. Find the error(s), if any:

Problem:

Simplify. Assume that the variable represents ***any*** real number.

$\sqrt{25x^2}$

Student's Solution:

$\sqrt{25x^2} = \sqrt{5 \cdot 5} \cdot \sqrt{x \cdot x} = 5x$

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

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18. Find the error(s), if any:

Problem:

Rationalize the denominator. Simplify. Assume that all variables represent positive real numbers. Type an exact answer, using radicals as needed.

$\frac{1}{\sqrt{12x}}$

Student's Solution:

$\frac{1}{\sqrt{12x}} = \frac{1}{\sqrt{12x}} \cdot \frac{\sqrt{12x}}{\sqrt{12x}} = \boxed{\frac{\sqrt{12x}}{12x}}$

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

For each problem number, you will see a math problem followed by a student's solution to that problem. Your task is to find the error(s) in the student's solution, if any.

19. Find the error(s), if any:

Problem:

Divide. Simplify your answer. Type your answer in the form $a + bi$. Use integers or fractions for any numbers in the expression.

$\frac{30-7i}{6i}$

Student's Solution:

$\frac{30-7i}{6i} = \frac{30}{6i} - \frac{7i}{6i} = 5i - \frac{7}{6} = -\frac{7}{6} + 5i$

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

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20. Find the error(s), if any:

Problem:

Multiply and then simplify if possible. Assume that all variables represent positive real numbers. Type an exact answer, using radicals as needed. Do not factor.

$\sqrt{7}\left(\sqrt{7}+y\sqrt{35}\right)$

Student's Solution:

$\sqrt{7}\left(\sqrt{7}+y\sqrt{35}\right)$

$= \sqrt{7}\cdot\sqrt{7}+\sqrt{7}\cdot y\sqrt{35}$

$= \sqrt{7\cdot 7}+y\sqrt{7\cdot 35}$

$= \sqrt{7\cdot 7}+y\sqrt{7\cdot 7\cdot 5}$

$= 7+7y\sqrt{5}$

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

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21. Find the error(s), if any:

Problem:

Simplify. Assume that all variables represent positive real numbers. Type an exact answer using radicals as needed.

$\sqrt[3]{25y^{14}}$

Student's Solution:

$\sqrt[3]{25y^{14}} = \sqrt[3]{5 \cdot 5 \cdot y \cdot y \cdot y \cdot y \cdot y \cdot y \cdot y \cdot y \cdot y \cdot y \cdot y \cdot y \cdot y} = y \cdot y \cdot y \cdot y \cdot \sqrt[3]{5 \cdot 5 \cdot y \cdot y}$

$= y^4 \cdot \sqrt[3]{25y^2}$

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

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22. Find the error(s), if any:

Problem:

Divide. Simplify your answer. Type an exact answer, using radicals and i as needed. Use integers or fractions for any numbers in the expression.

$\frac{\sqrt{-6}}{\sqrt{-3}}$

Student's Solution:

$\frac{\sqrt{-6}}{\sqrt{-3}} = \sqrt{\frac{-6}{-3}} = \boxed{\sqrt{2}}$

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

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23. Find the error(s), if any:

Problem:

Solve. Express your answer as an integer or fraction in lowest terms. Simplify.

$\sqrt[3]{2x-14}-1=-5$

Student's Solution:

$\sqrt[3]{2x-14}-1=-5$	Check $x=-25$
$\sqrt[3]{2x-14}=-4$	$\sqrt[3]{2(-25)-14}-1=-5$
$\left(\sqrt[3]{2x-14}\right)^3=(-4)^3$	$\sqrt[3]{-50-14}-1=-5$
$2x-14=-64$	$\sqrt[3]{-64}-1=-5$
$2x=-50$	$-4-1=-5$
$x=-25$	$-5=-5$ ✓

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

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24. Find the error(s), if any:

Problem:

Write in terms of i. Simplify your answer. Type an exact answer, using radicals and i as needed.

$8\sqrt{-63}$

Student's Solution:

$8\sqrt{-63} = 8 \cdot i\sqrt{63} = 8 \cdot i\sqrt{7 \cdot 7} \cdot 3 = 8 \cdot 7 \cdot i\sqrt{3} = 56i\sqrt{3}$

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

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25. Find the error(s), if any:

Problem:

Identify the domain and then graph the function using the table below. Express your domain in interval notation.

$f(x) = \sqrt{x - 10}$

x	$f(x)$
10	
11	
14	
19	

Student's Solution:

$x - 10 > 0$

$x > 10$

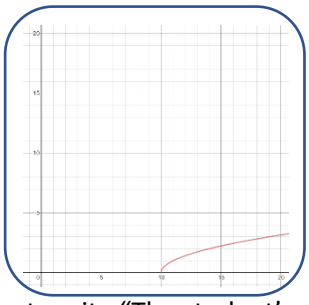
Domain: $(10, \infty)$

If $x = 10$, then $y = \sqrt{10 - 10} = \sqrt{0} = 0$ $(10,0)$

If $x = 11$, then $y = \sqrt{11 - 10} = \sqrt{1} = 1$ $(11,1)$

If $x = 14$, then $y = \sqrt{14 - 10} = \sqrt{4} = 2$ $(14,2)$

If $x = 19$, then $y = \sqrt{19 - 10} = \sqrt{9} = 3$ $(19,3)$



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26. Find the error(s), if any:

Problem:

Simplify the radical expression. Assume that all variables represent positive real numbers.

$$-\sqrt[3]{\frac{z^{30}}{216x^{21}}}$$

Student's Solution:

$$-\sqrt[3]{\frac{z^{30}}{216x^{21}}}$$

Using the shortcut rule, $30 \div 3 = 10$, $216 \div 3 = 72$, and $21 \div 3 = 7$, so…

$$-\sqrt[3]{\frac{z^{30}}{216x^{21}}} = -\frac{z^{10}}{72x^{7}}$$

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

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27. Find the error(s), if any:

Problem:

Use radical notation to rewrite the expression. Simplify your answer. Type an exact answer, using radicals as needed.

$4^{\frac{1}{2}}$

Student's Solution:

$4^{\frac{1}{2}} = 4 \cdot \frac{1}{2} = \boxed{2}$

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

For each problem number, you will see a math problem followed by a student's solution to that problem. Your task is to find the error(s) in the student's solution, if any.

28. Find the error(s), if any:

Problem:

Subtract. Simplify your answer.

$$\sqrt[3]{\frac{3}{125}} - \frac{\sqrt[3]{3}}{3}$$

Student's Solution:

$$\sqrt[3]{\frac{3}{125}} - \frac{\sqrt[3]{3}}{3} = \frac{\sqrt[3]{3}}{\sqrt[3]{125}} - \frac{\sqrt[3]{3}}{3} = \frac{\sqrt[3]{3}}{5} - \frac{\sqrt[3]{3}}{3} = \boxed{\frac{\sqrt[3]{3}}{2}}$$

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.

For each problem number, you will see a math problem followed by a student's solution to that problem. Your task is to find the error(s) in the student's solution, if any.

29. Find the error(s), if any:

Problem:

Multiply. Simplify your answer. Type your answer in the form $a + bi$.

$(14 - 2i)(7 + i)$

Student's Solution:

$(14 - 2i)(7 + i)$

$= 102 + 14i - 14i - 2i^2$

$= 102 - 2$

$= \boxed{100}$

Evaluate the student's solution. If the student's solution is completely correct, write "The student's solution is correct." Otherwise, describe each error in your own words. Do not correct the error. Do not write what the correct answer/solution should have been. Just describe, in your own words, what is wrong with the student's solution. Your job is to convince me that you understand algebra.