Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Unit 1 Review – Polynomials & Complex Numbers**

**Helpful Information:**

**iClock**

**Level I Practice:**

1. The solution set for the equation  is

|  |  |
| --- | --- |
| 1) |  |
| 2) |  |
| 3) |  |
| 4) |  |

1. Express  in  form.
2. Simplify each of the expressions completely:
	1. $5\sqrt[3]{9y²}∙\sqrt[3]{24y}$ b. $\frac{\sqrt[3]{81x^{5}y^{3}}}{\sqrt[3]{3x^{2}}}$

**Level II Practice:**

1. Given *i* is the imaginary unit,  in simplest form is

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| --- | --- |
| 1) |  |
| 2) |  |
| 3) |  |
| 4) |  |
|  |  |

1. The power *P*, in watts, that a circular solar cell produces and the radius of the cell *r* in centimeters are related by the square root equation $r=\sqrt{\frac{P}{0.02π}}$. About how much power is produced by a cell with a radius of 12 cm?
2. Twyla and Ben are simplifying $4\sqrt{32}+6\sqrt{18}$. Is either of them correct? Explain your reasoning.

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| **TWYLA** | **BEN** |
| $$4\sqrt{32}+6\sqrt{18}$$$$4∙\sqrt{4^{2}∙2}+6\sqrt{3^{2}∙2}$$$$16\sqrt{2}+18\sqrt{2}$$$$34\sqrt{2}$$ | $$4\sqrt{32}+6\sqrt{18}$$$$4∙\sqrt{16∙2}+6\sqrt{9∙2}$$$$64\sqrt{2}+54\sqrt{2}$$$$118\sqrt{2}$$ |

**Level III Practice:**

1. The speed of a tidal wave, *s*, in hundreds of miles per hour, can be modeled by the equation , where *t* represents the time from its origin in hours. Algebraically determine the time when . How much faster was the tidal wave traveling after 1 hour than 3 hours, to the *nearest mile per hour*? Justify your answer.
2. Simplify completely: $\left[\left(2+i\right)x²-ix+5+1\right]-\left[\left(-3+4i\right)x²+\left(5-5i\right)x-6\right]$
3. The expression  is equivalent to

|  |  |
| --- | --- |
| 1) |  |
| 2) |  |
| 3) |  |
| 4) |  |