

Bellwork: Multiply $(9-3i)(2+i)$

$$18 + 9i - 6i - 3i^2$$

$$-3(-1)$$

$$\underline{18} + 3i + \underline{3}$$

$$\underline{21 + 3i}$$

$$20) \frac{20a^{-3}b^7}{15a^{-9}b^3} = \frac{4a^9b^4}{3a^3}$$

$$\sqrt{-16} = 4i = \frac{4a^6b^4}{3}$$

$$21) 3 + 5\sqrt{2} + 6\sqrt{-2} + 9\sqrt{2} - \sqrt{-2}$$

$$3 + 5\sqrt{2} + 6i\sqrt{2} + 9\sqrt{2} - i\sqrt{2}$$

$$\boxed{3 + 14\sqrt{2} + 5i\sqrt{2}} \quad a + bi$$

$$\boxed{a = 3 + 14\sqrt{2} \quad b = 5\sqrt{2}}$$

Today's Objectives:

Review for Unit 1 Test

Don't forget to make a notecard!!!

1. Simplify: $(\underline{3x^2} - \underline{4x} + 6) + (\underline{5x^2} - \underline{2x} - 7)$

$$8x^2 - 6x - 1$$

2. Find the product:

$$-3x(2x^4 + 5x^2 - 6)$$

$$-6x^5 - 15x^3 + 18x$$

3. Find the product:

$$(5x-3)(5x+3)$$

	$5x - 3$	
$5x$	$25x^2$	<u>$-15x$</u>
$+3$	<u>$15x$</u>	-9

$$25x^2 - 9$$

4. Simplify:

$$(-3t^3r^7)^3$$

$$(-3)^3 (t^3)^3 (r^7)^3$$

$$\boxed{-27 t^9 r^{21}}$$

5. Simplify:

$$\left(\frac{a^5}{3b^5c^{-3}}\right)^4 = \frac{a^{20}}{3^4 b^{20} c^{-12}}$$

$$\boxed{\frac{a^{20} c^{12}}{81 b^{20}}}$$

$$3^4$$

$$(b^5)^4$$

6. Simplify:

$$\sqrt{54a^5b^2c^6}$$

$(3a^2b^3\sqrt{6a})$

27
 9 (3)
 (3)(3)

~~aaaaa~~ a

7. Simply:

$$(81x^8y^{12}z)^{\frac{3}{4}}$$

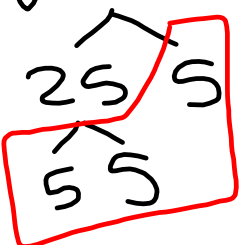
$$\left(\sqrt[4]{81x^8y^{12}z}\right)^3 = \left(3x^2y^3\sqrt[4]{z}\right)^3$$

9 9
 3 3 3 3

$= 27x^6y^9\sqrt[4]{z^3}$

8. Evaluate: $125^{\frac{2}{3}}$

$$125^{(2 \div 3)}$$

$$\left(\sqrt[3]{125}\right)^2 = (5)^2 = 25$$


9. Simplify:

$$8\sqrt{5} + 6\sqrt{5}$$

$$= 14\sqrt{5}$$

10. Calculate and simplify:

$$3 \cdot 2^2 \sqrt{5}$$

$$3 \cdot 4 \sqrt{5}$$

$$12 \sqrt{5}$$

$$3\sqrt{80} - 5\sqrt{45}$$

$\begin{matrix} \textcircled{5} \\ \swarrow \searrow \\ 8 \quad 10 \\ \swarrow \searrow \\ 4 \textcircled{2} \textcircled{5} \textcircled{2} \\ \swarrow \searrow \\ \textcircled{2} \textcircled{2} \end{matrix}$
 $\begin{matrix} \textcircled{3} \\ \swarrow \searrow \\ 9 \\ \swarrow \searrow \\ \textcircled{3} \textcircled{3} \end{matrix}$

$$- 5 \cdot 3 \sqrt{5}$$

$$12 \sqrt{5} - 15 \sqrt{5} = \textcircled{-3 \sqrt{5}}$$

12. Find the product:

$$(-3i)(-10i)$$

11. Find the product: $(2+3i)(4-5i)$

$2+3i$	
$4 \cdot 8$	$12i$
$-5i \cdot -10i$	$-15i^2$

$-15(-1)$

$8 + 2i + 15$
 $23 + 2i$

13. In standard $a + bi$ form, identify the value of b in the following expression:

$2 + \sqrt{-40}$

$2 \sqrt{-40}$
 $\swarrow \searrow$
 8 (5)
 $\swarrow \searrow$
 4 (2)
 $\swarrow \searrow$
 2 (2)

negative in
sqrt means
 i comes out

$2 \cdot 2i \sqrt{10}$
 $4i\sqrt{10}$

