

1) Find the values of  $x$  and  $y$  that make the equation  $5x + 6i = -35 - (24y)i$  true

- A.  $x = -7, y = -1/4$       B.  $x = -1/7, y = -1/4$       C.  $x = -1/7, y = -4$       D.  $x = -7, y = -4$

2) Find the complex conjugate of  $5i + 7$

- A.  $7 - 5i$       B.  $7 + 5i$       C.  $5i - 7$       D.  $-7 - 5i$

3) Write the result in the form  $a + bi$ :  $-2i(4 + 3i) - 3(5 + 9i)$

4) Express  $\sqrt{-192}$  in simplest radical form

- A.  $8\sqrt{3}$       B.  $i\sqrt{192}$       C.  $8i\sqrt{3}$       D.  $3i\sqrt{8}$

5) Find the product and quotient of  $(5 + 2i)$  and  $(3 - 8i)$

Product:

Quotient:

Simplify the following powers of  $i$

6)  $-4i^{12}$

7)  $2 - 3i^5 + 2i^{19}$

8)  $5i^{34} - 2i^8$

9) Find the product  $i\sqrt{7}(6 - i\sqrt{7})$

10) Simplify  $-i^2\sqrt{-100}$

SIMPLIFY EACH OF THE FOLLOWING EXPRESSIONS:

$$11) \sqrt[3]{\frac{4x^5}{8x}}$$

$$12) 4^2 \cdot 4^{\frac{3}{2}}$$

$$13) \frac{64^{\frac{2}{3}}}{64^{\frac{7}{3}}}$$

$$14) \left(a^{\frac{1}{4}}b^2\right)^8 \sqrt{a^{10}b^7}$$

$$15) \sqrt{\frac{80}{25}}$$

$$16) \sqrt[3]{-48x^8y^{12}}$$

$$17) \frac{-8}{5i}$$

$$18) (5x^4y^3)^{-2}$$

$$19) x^{\frac{4}{5}}y^5 \cdot x^{\frac{1}{3}}y^{\frac{1}{2}} \cdot xy$$

$$20) \sqrt[3]{\frac{3x^3}{49}}$$