

6, 7, 8, 9, 10

6. $7\sqrt{3} - 3\sqrt{7}$

7. $\sqrt{6} + \sqrt{36} + \sqrt{216}$
 $\sqrt{6} + 6 + 6\sqrt{6}$
 $7\sqrt{6} + 6$

Handwritten notes in red:
 $2 \cdot 3 \sqrt{2 \cdot 3}$
 $6\sqrt{6}$
 $2 \sqrt{108}$
 $2 \sqrt{54}$
 $2 \sqrt{27}$
 $3 \sqrt{9}$
 $3 \sqrt{3}$

8. $\sqrt{5} + \sqrt{25} + \sqrt{125}$
 $\sqrt{5} + 5 + 5\sqrt{5}$
 $5 + 6\sqrt{5}$

Handwritten notes in red:
 $5 \sqrt{25}$
 $5 \sqrt{5}$

9. $\sqrt{50} + \sqrt{63} - \sqrt{32}$
 $5\sqrt{2} + 3\sqrt{7} + 2 \cdot 2\sqrt{2}$
 $5\sqrt{2} + 3\sqrt{7} + 4\sqrt{2}$
 $9\sqrt{2} + 3\sqrt{7}$

Handwritten notes in red:
 $5 \sqrt{10}$
 $3 \sqrt{21}$
 $2 \sqrt{16}$
 $2 \sqrt{8}$
 $2 \sqrt{4}$
 $2 \sqrt{2}$

10. $\sqrt{18} + \sqrt{24} - \sqrt{54}$
 $3\sqrt{2} + 2\sqrt{6} - 3\sqrt{6}$
 $3\sqrt{2} - \sqrt{6}$

Handwritten notes in red:
 $2 \sqrt{9}$
 $2 \sqrt{12}$
 $6 \sqrt{9}$
 $2 \sqrt{3}$
 $3 \sqrt{3}$
 $3 \sqrt{3}$

HW Assessment

4/13

4. $\sqrt{27} + 2\sqrt{75}$

imaginary numbers

$$(\sqrt{-9})^2 \rightarrow -9$$

$$(3)(3) = 9$$

$$(-3)(-3) = 9$$

$$\sqrt{-1}$$

$$\text{something}^2 = -1$$

$$i^2 = -1$$

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

$$\sqrt{-9} = \sqrt{-1 \cdot 9} = i \cdot 3 = 3i$$

$$\sqrt{-36} = 6i$$

$$3\sqrt{-4} = 3 \cdot 2i = 6i$$

$$-2\sqrt{-121} = -2 \cdot 11i = -22i$$

$$\sqrt{-8} = 2i\sqrt{2}$$

$\begin{array}{c} \uparrow \\ 4 \cdot 2 \\ \textcircled{2} \cdot 2 \end{array}$

$$-\sqrt{-54} = -i\sqrt{54} = -3i\sqrt{6}$$

$\begin{array}{c} \uparrow \quad \uparrow \\ 9 \quad 6 \\ \textcircled{3} \cdot 3 \quad 3 \cdot 2 \end{array}$

$$2i \cdot 5i = 10i^2$$
$$10(-1) = -10$$

$i^2 = -1$

$$7i \cdot 3i = 21i^2 = -21$$

powers of i

$$i = \underline{i}$$

$$i^2 = \underline{-1}$$

$$i^3 = i^2 \cdot i = \underline{-i}$$

$$i^4 = i^3 \cdot i = -i \cdot i = -i^2 = -(-1) = \underline{1}$$

$$i^5 = i^4 \cdot i = 1 \cdot i = \underline{i}$$

$$i^6 = i^5 \cdot i = i \cdot i = i^2 = \underline{-1}$$

$$i^7 = i^6 \cdot i = -1 \cdot i = \underline{-i}$$

$$i^8 = i^7 \cdot i = -i \cdot i = -i^2 = \underline{1}$$

$$i^9 = i^8 \cdot i = i$$

$$i^{10} = -1$$

$$i^{12} = 1$$

$$i^{11} = -i$$

your turn

$$-\sqrt{-27}$$

$$4i \cdot 5i$$