

Simplify each.

1. $\sqrt{117}$

2. $\sqrt{294}$

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

Simplify each.

3. $\sqrt{-196}$

4. $\sqrt{-72}$

Simplify each.

5. $\frac{12 - 16x}{6}$

6. $\frac{-10 + \sqrt{8}}{2}$

Simplify each.

1. $\sqrt{117}$

$= \sqrt{9 \cdot 13}$

$= \sqrt{9} \cdot \sqrt{13}$

$= \boxed{3\sqrt{13}}$

PERFECT
SQUARES

4	81
9	100
16	121
25	144
36	169
49	
64	

2. $\sqrt{294}$

$= \sqrt{49 \cdot 6}$

$= \sqrt{49} \cdot \sqrt{6}$

$= \boxed{7\sqrt{6}}$

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

Simplify each.

3. $\sqrt{-196}$

$= \sqrt{-1} \cdot \sqrt{196}$

$= i \cdot 14$

$= \boxed{14i}$

4. $\sqrt{-72}$

$= \sqrt{-1 \cdot 36 \cdot 2} = \sqrt{-1} \cdot \sqrt{36} \cdot \sqrt{2}$

$= \cancel{\sqrt{-1}} \cdot \cancel{\sqrt{36}} \cdot \sqrt{2} = i \cdot 6 \cdot \sqrt{2}$

$= \boxed{6i\sqrt{2}}$

Simplify each.

5. $\frac{12 - 16x}{6}$

$= \frac{12}{6} - \frac{16}{6}x$

$$= \boxed{2 - \frac{8}{3}x}$$

or

$$\frac{6 - 8x}{3}$$

6. $\frac{-10 + \sqrt{8}}{2} \rightarrow \sqrt{8} = \sqrt{4 \cdot 2} = \sqrt{4} \cdot \sqrt{2} = 2\sqrt{2}$

$= \frac{-10 + 2\sqrt{2}}{2}$

$= \frac{-10}{2} + \frac{2\sqrt{2}}{2}$

$= \boxed{-5 + \sqrt{2}}$