Name _____

Alg 2 Trig Practice WS 6.5-6.6

Work the following problems on a separate paper:

6.5 Simplify

1. $\sqrt[3]{88}$
2. $-\sqrt{\frac{4}{9}}$
3. $\sqrt[3]{125s^3}$
4. $\sqrt{64x^6}$
5. $\sqrt{m^8n^4}$
6. $-\sqrt{100p^4q^2}$
7. $\sqrt[4]{16w^4v^8}$
8. $\sqrt{(-3c)^4}$
9. $\sqrt{(a^2+2ab+b^2)}$
10. $\sqrt[3]{-27n^3w^9}$

11. Salvatore is buying fertilizer for his triangular garden. He knows the lengths of all three sides, so he is using Hero's formula to find the area. Hero's formula states that the area of a triangle is $\sqrt{s(s-a)(s-b)(s-c)}$, where *a, b,* and *c* are the lengths of the sides of the triangle and s is half the perimeter of the triangle. If the lengths of the sides of Salvatore's garden are 15 feet, 17 feet, and 20 feet, what is the area of the garden? Round answers to the nearest whole number.

6.6 Simplify

12. $\sqrt[3]{128}$
13. $\sqrt[3]{16}$
14. $\sqrt{\frac{5}{2w}}$
15. $\sqrt[3]{\frac{1a^5}{16b^4}}$
16. $\left(3\sqrt{15}\right)\left(-4\sqrt{45}\right)$
17. $\sqrt{810}+\sqrt{240}-\sqrt{250}$
18. $\left(3-\sqrt{7}\right)^2$
19. $\left(\sqrt{5}-\sqrt{6}\right)\left(\sqrt{5}+\sqrt{2}\right)$
20. $\frac{6}{\sqrt{x}-1}$
21. $\frac{5+\sqrt{3}}{4+\sqrt{3}}$

22. The measures of the legs of a right triangle can be represented by the expressions $6x^2y$ *and* $9x^2y$. Use the Pythagorean Theorem to find a simplified expression for the measures of the hypotenuse.

ANSWERS

Alg 2 Trig Practice WS 6.5-6.6

6.5 Simplify

1. $\sqrt[3]{88}$ $2\sqrt[3]{11}$

2. $-\sqrt{\frac{4}{9}}$ $\frac{-2}{3}$

3. $\sqrt[3]{125s^3}$ $5s$

4. $\sqrt{64x^6}$ $8x^3$

5. $\sqrt{m^8n^4}$ m^4n^2

6. $-\sqrt{100p^4q^2}$ $-10p^2q$

7. $\sqrt[4]{16w^4v^8}$ $2wv^2$

8. $\sqrt{(-3c)^4}$ $9c^2$

9. $\sqrt{(a^2+2ab+b^2)}$ $a+b$

10. $\sqrt[3]{-27n^3w^9}$ $-3nw^3$

11. Salvatore is buying fertilizer for his triangular garden. He knows the lengths of all three sides, so he is using Hero's formula to find the area. Hero's formula states that the area of a triangle is $\sqrt{s(s-a)(s-b)(s-c)}$, where *a*, *b*, and *c* are the lengths of the sides of the triangle and s is half the perimeter of the triangle. If the lengths of the sides of Salvatore's garden are 15 feet, 17 feet, and 20 feet, what is the area of the garden? Round answers to the nearest whole number.

$A = 124.3ft^2$

6.6 Simplify

12. $\sqrt[3]{128}$ $4\sqrt[3]{2}$

13. $\sqrt[3]{16}$ $2\sqrt[3]{2}$

14. $\sqrt{\frac{5}{2w}}$ $\frac{\sqrt{10w}}{2w}$

15. $\sqrt[3]{\frac{1a^5}{16b^4}}$ $\frac{a\sqrt[3]{4a^2b^2}}{4b^2}$

16. $\left(3\sqrt{15}\right)\left(-4\sqrt{45}\right)$ $-180\sqrt{3}$

17. $\sqrt{810}+\sqrt{240}-\sqrt{250}$ $4\sqrt{10}+4\sqrt{15}$

18. $\left(3-\sqrt{7}\right)^2$ $16-6\sqrt{7}$

19. $\left(\sqrt{5}-\sqrt{6}\right)\left(\sqrt{5}+\sqrt{2}\right)$ $5+\sqrt{10}-\sqrt{30}-2\sqrt{3}$

20. $\frac{6}{\sqrt{x}-1}$ $\frac{6\sqrt{x}+6}{x-1}$

21. $\frac{5+\sqrt{3}}{4+\sqrt{3}}$ $\frac{17-\sqrt{3}}{13}$

22. The measures of the legs of a right triangle can be represented by the expressions $6x^2y$ *and* $9x^2y$. Use the Pythagorean Theorem to find a simplified expression for the measures of the hypotenuse. $c = 3x^2y\sqrt{13}$