

Geometry

Name: _____

Hour: _____

Simplifying Radicals

Simplify each radical. Leave answers in radical form—No Decimals! SHOW WORK!

1. $\sqrt{81}$ _____

2. $\sqrt{75}$ _____

3. $\sqrt{147}$ _____

4. $\sqrt{242}$ _____

5. $\sqrt{600}$ _____

6. $\sqrt{192}$ _____

7. $\sqrt{144}$ _____

8. $\sqrt{32}$ _____

9. $\sqrt{40}$ _____

10. $\sqrt{243}$ _____

11. $\sqrt{432}$ _____

12. $2\sqrt{98}$ _____

Geometry

Name: Key

Hour: _____

Simplifying Radicals

Simplify each radical. Leave answers in radical form—No Decimals! SHOW WORK!

1. $\sqrt{81}$

9

2. $\sqrt{75}$

$5\sqrt{3}$

3. $\sqrt{147}$

$7\sqrt{3}$

4. $\sqrt{242}$

$11\sqrt{2}$

5. $\sqrt{600}$

$10\sqrt{6}$

6. $\sqrt{192}$

$8\sqrt{3}$

7. $\sqrt{144}$

12

8. $\sqrt{32}$

$4\sqrt{2}$

9. $\sqrt{40}$

$2\sqrt{10}$

10. $\sqrt{243}$

$9\sqrt{3}$

11. $\sqrt{432}$

$12\sqrt{3}$

12. $2\sqrt{98}$

$14\sqrt{2}$

13. $\sqrt{48}$

$4\sqrt{3}$

14. $6\sqrt{250}$

$30\sqrt{10}$

15. $5\sqrt{108}$

$30\sqrt{3}$

16. $3\sqrt{28}$

$6\sqrt{7}$

17. $\sqrt{5}\cdot\sqrt{10}$

$5\sqrt{2}$

18. $\sqrt{6}\cdot\sqrt{15}$

$3\sqrt{10}$

19. $6\sqrt{5}\cdot\sqrt{2}$

$6\sqrt{10}$

20. $3\sqrt{3}\cdot\sqrt{20}$

$6\sqrt{15}$

21. $\sqrt{6}\cdot 9\sqrt{24}$

108

22. $2\sqrt{5}\cdot 3\sqrt{15}$

$30\sqrt{3}$

23. $6\sqrt{6}\cdot 8\sqrt{8}$

$192\sqrt{3}$

24. $\sqrt{8}\cdot 6\sqrt{12}$

$24\sqrt{6}$

25. $5\sqrt{18}\cdot 3\sqrt{3}$

$45\sqrt{6}$

26. $5\sqrt{6}\cdot 7\sqrt{10}$

$70\sqrt{15}$

Geometry
Rationalizing Radicals/Simplifying

Name: _____

Hour: _____

Simplify the following radicals. Leave answers in radical form...NO DECIMALS!

1. $\sqrt{75}$

$5\sqrt{3}$

2. $\sqrt{121}$

11

3. $\sqrt{243}$

$9\sqrt{3}$

4. $\sqrt{68}$

$2\sqrt{17}$

5. $\sqrt{5} \cdot \sqrt{10}$

$5\sqrt{2}$

6. $\sqrt{12} \cdot \sqrt{2}$

$2\sqrt{6}$

7. $4\sqrt{20} \cdot 2\sqrt{5}$

80

8. $3\sqrt{8} \cdot 6\sqrt{12}$

$72\sqrt{6}$

9. $\sqrt{5} \cdot 4\sqrt{25}$

$20\sqrt{5}$

10. $8\sqrt{3} \cdot 2\sqrt{6}$

$48\sqrt{2}$

Rationalize the following radicals. Leave answers in radical form...NO DECIMALS!

11. $\frac{6}{\sqrt{2}}$

$3\sqrt{2}$

12. $\frac{5}{\sqrt{3}}$

$\frac{5\sqrt{3}}{3}$

13. $\frac{17}{\sqrt{2}}$

$\frac{17\sqrt{2}}{2}$

14. $\frac{75}{\sqrt{3}}$

$25\sqrt{3}$

15. $\frac{5\sqrt{2}}{\sqrt{2}}$

5

16. $\frac{8}{\sqrt{2}}$

$4\sqrt{2}$

17. $\frac{81}{\sqrt{3}}$

$27\sqrt{3}$

18. $\frac{15}{\sqrt{5}}$

$3\sqrt{5}$

19. $\frac{21}{\sqrt{3}}$

$7\sqrt{3}$

20. $\frac{20\sqrt{3}}{\sqrt{3}}$

20

Honors Geometry
Operations with Radicals



Name _____

Rewrite the following in simple radical form.

1) $\sqrt{63}$

$3\sqrt{7}$

2) $\sqrt{27}$

$3\sqrt{3}$

3) $\sqrt{50}$

$5\sqrt{2}$

4) $\sqrt{180}$

$6\sqrt{5}$

5) $8\sqrt{54}$

$24\sqrt{6}$

6) $2\sqrt{98}$

$14\sqrt{2}$

7) $5\sqrt{108}$

$30\sqrt{3}$

8) $12\sqrt{60}$

$24\sqrt{15}$

Multiply and rewrite in simple radical form.

9) $\sqrt{5} \cdot \sqrt{10}$

$5\sqrt{2}$

10) $\sqrt{6} \cdot \sqrt{15}$

$3\sqrt{10}$

11) $3\sqrt{3} \cdot \sqrt{20}$

$6\sqrt{15}$

12) $\sqrt{6} \cdot 9\sqrt{24}$

108

13) $2\sqrt{5} \cdot 3\sqrt{15}$

$30\sqrt{3}$

14) $6\sqrt{6} \cdot 8\sqrt{8}$

$192\sqrt{3}$

15) $\sqrt{8} \cdot 6\sqrt{12}$

$24\sqrt{6}$

16) $5\sqrt{18} \cdot 3\sqrt{3}$

$45\sqrt{6}$

Add/Subtract and rewrite in simple radical form.

17) $\sqrt{5} + 2\sqrt{5}$

$3\sqrt{5}$

18) $3\sqrt{3} - 5\sqrt{3}$

$-2\sqrt{3}$

19) $7\sqrt{6} - \sqrt{6}$

$6\sqrt{6}$

20) $2\sqrt{8} + 3\sqrt{8}$

$10\sqrt{2}$

21) $\sqrt{27} + \sqrt{12}$

$5\sqrt{3}$

22) $\sqrt{18} - \sqrt{8}$

$\sqrt{2}$

23) $3\sqrt{24} - 4\sqrt{54}$

$-6\sqrt{6}$

24) $6\sqrt{12} - 3\sqrt{48}$

0

Divide and rewrite in simple radical form.

25) $\frac{1}{\sqrt{2}}$

$$\frac{\sqrt{2}}{2}$$

26) $\frac{\sqrt{5}}{\sqrt{3}}$

$$\frac{\sqrt{15}}{3}$$

27) $\frac{\sqrt{6}}{\sqrt{15}}$

$$\frac{\sqrt{10}}{5}$$

28) $\frac{\sqrt{5}}{\sqrt{60}}$

$$\frac{\sqrt{3}}{6}$$

29) $\frac{4\sqrt{8}}{\sqrt{10}}$

$$\frac{8\sqrt{5}}{5}$$

30) $\frac{3\sqrt{12}}{\sqrt{24}}$

$$\frac{3\sqrt{2}}{2}$$

31) $\frac{9}{\sqrt{3}}$

$$3\sqrt{3}$$

32) $\frac{\sqrt{45}}{\sqrt{30}}$

$$\frac{\sqrt{6}}{2}$$

33) $\frac{15\sqrt{3}}{3\sqrt{5}}$

$$\sqrt{15}$$

34) $\frac{4\sqrt{3}}{\sqrt{2}}$

$$2\sqrt{6}$$

35) $\frac{9\sqrt{5}}{\sqrt{15}}$

$$3\sqrt{3}$$

36) $\frac{4\sqrt{6}}{3\sqrt{27}}$

$$\frac{4\sqrt{2}}{9}$$

