Radicals skill 16 Name: _____

Simplify

① $\sqrt{50}$ ② $\sqrt{28}$ ③ $\sqrt{100}$ ④ $\sqrt{300}$

⑤ $\sqrt{72}$ ⑥ $\sqrt{20}$ ⑦ $\sqrt{81}$ ⑧ $\sqrt{18}$

⑨ $3\sqrt{20}$ ⑩ $5\sqrt{50}$ ⑪ $2\sqrt{18}$

⑫ $3\sqrt{144}$ ⑬ $7\sqrt{36}$ ⑭ $\frac{2\sqrt{36}}{6}$

Practice Simplifying Radicals
skill 16

Name _____

(1) $\sqrt{18}$ (2) $\sqrt{50}$ (3) $\sqrt{20}$ (4) $\sqrt{36}$

(5) $\sqrt{45}$ (6) $\sqrt{60}$ (7) $\sqrt{8}$ (8) $\sqrt{12}$

(9) $\sqrt{100}$ (10) $\sqrt{81}$ (11) $\sqrt{144}$ (12) $\sqrt{9}$

(13) $3\sqrt{500}$ (14) $2\sqrt{75}$ (15) $\frac{8\sqrt{25}}{5}$

(16) $\frac{9\sqrt{12}}{2}$ (17) $5\sqrt{25}$ (19) $3\sqrt{121}$

(20) $-2\sqrt{300}$ (21) $-5\sqrt{12}$ (22) $\frac{\sqrt{18}}{3}$

Radicals

Name: _____

Simplify

① $\sqrt{50}$ $5\sqrt{2}$

② $\sqrt{28}$ $2\sqrt{7}$

③ $\sqrt{100}$ 10

④ $\sqrt{300}$ $10\sqrt{3}$

⑤ $\sqrt{72}$ $6\sqrt{2}$

⑥ $\sqrt{20}$ $2\sqrt{5}$

⑦ $\sqrt{81}$ 9

⑧ $\sqrt{18}$ $3\sqrt{2}$

⑨ $3\sqrt{20}$ $6\sqrt{5}$

⑩ $5\sqrt{50}$ $5\sqrt{2}$ $25\sqrt{2}$

⑪ $2\sqrt{18}$ $3\sqrt{2}$ $6\sqrt{2}$

⑫ $3\sqrt{144}$ 3×12 36

⑬ $7\sqrt{36}$ $7\cdot6$ 42

⑭ $\frac{2\sqrt{36}}{6}$ 2

Practice - Simplifying Radicals

Key

Name

① $\sqrt{18}$

$\sqrt{9}\sqrt{2}$

$3\sqrt{2}$

② $\sqrt{50}$

$\sqrt{25}\sqrt{2}$

$5\sqrt{2}$

③ $\sqrt{20}$

$\sqrt{4}\sqrt{5}$

$2\sqrt{5}$

④ $\sqrt{36}$

6

⑤ $\sqrt{45}$

$\sqrt{9}\sqrt{5}$

$3\sqrt{5}$

⑥ $\sqrt{60}$

$\sqrt{4}\sqrt{15}$

$2\sqrt{15}$

⑦ $\sqrt{8}$

$\sqrt{4}\sqrt{2}$

$2\sqrt{2}$

⑨ $\sqrt{12}$

$\sqrt{4}\sqrt{3}$

$2\sqrt{3}$

⑩ $\sqrt{100}$

10

⑪ $\sqrt{81}$

9

⑫ $\sqrt{144}$

12

⑬ $\sqrt{9}$

3

⑭ $3\sqrt{500}$

$\sqrt{100}\sqrt{5}$

$10\sqrt{5}$

$30\sqrt{5}$

⑮ $2\sqrt{75}$

$\sqrt{25}\sqrt{3}$

$5\sqrt{3}$

$10\sqrt{3}$

⑯ $\frac{8\sqrt{25}}{5}$

8×5

$\frac{40}{5} = 8$

⑰ $9\sqrt{12}$

$\sqrt{4}\sqrt{3}$

$9 \times 2\sqrt{3}$

$18\sqrt{3}$

$\frac{18\sqrt{3}}{2} = 9\sqrt{3}$

⑱ $5\sqrt{25}$

5×5

25

⑲ $3\sqrt{121}$

3×11

33

FMa10 skill 17 Name _____

Fraction Exponents NO CALCULATOR

1. $8^{\frac{1}{3}}$
2. $16^{\frac{1}{4}}$
3. $16^{\frac{1}{2}}$
4. $32^{\frac{1}{5}}$
5. $27^{\frac{1}{3}}$
6. $8^{\frac{2}{3}}$
7. $8^{\frac{3}{3}}$
8. $4^{\frac{3}{2}}$
9. $27^{\frac{2}{3}}$
10. $16^{\frac{3}{4}}$
11. $81^{\frac{1}{4}}$
12. $81^{\frac{3}{4}}$
13. $16^{\frac{5}{4}}$
14. $(-27)^{\frac{1}{3}}$
15. $(-8)^{\frac{2}{3}}$
16. $(-4)^{\frac{1}{2}}$
17. $(-125)^{\frac{2}{3}}$
18. $\left(\frac{1}{16}\right)^{\frac{1}{2}}$
19. $\left(\frac{1}{8}\right)^{\frac{1}{3}}$
20. $\left(\frac{8}{27}\right)^{\frac{1}{3}}$

Math 10 - Negative Exponents Name _____

Skill 18

Change to a positive exponent - Do not evaluate

(1) $2^{-3} =$ (2) $5^{-2} =$ (3) $7^{-1} =$ (4) $8^{-5} =$

(5) $3^{-4} =$ (6) $3^{-7} =$ (7) $1^{-2} =$ (8) $10^{-3} =$

(9) $10^{-5} =$ (10) $4^{-3} =$ (11) $6^{-1} =$ (12) $5^{-8} =$

(13) $\frac{1}{3^{-2}} =$ (14) $\frac{1}{5^{-3}} =$ (15) $\frac{1}{10^{-1}} =$ (16) $\frac{1}{8^{-2}} =$

(17) $\frac{1}{4^{-6}} =$ (18) $\frac{1}{3^{-5}} =$ (19) $\frac{1}{6^{-1}} =$ (20) $\frac{1}{5^{-7}} =$

(21) $(-3)^{-5} =$ (22) $(-6)^{-4} =$ (23) $(-2)^{-1} =$ (24) $(-8)^{-3} =$

(25) $(-7)^{-6} =$ (26) $(-10)^{-7} =$ (27) $(-4)^{-2} =$ (28) $(-3)^{-7} =$

(29) $\left(\frac{2}{3}\right)^{-5} =$ (30) $\left(\frac{4}{5}\right)^{-7} =$ (31) $\left(\frac{3}{4}\right)^{-1} =$ (32) $\left(\frac{5}{6}\right)^{-3} =$

(33) $\left(\frac{5}{4}\right)^{-2} =$ (34) $\left(\frac{10}{3}\right)^{-6} =$ (35) $(.5)^{-3} =$ (36) $(.3)^{-7} =$

(hint, change to fraction)

Math 10 Positive and Negative Exponents

Skill 18

Evaluate (if negative exponent, rewrite with positive exponent first)

1. $2^3 =$
2. $3^{-2} =$
3. $6^{-1} =$
4. $5^{-2} =$
5. $7^1 =$
6. $8^2 =$
7. $7^{-2} =$
8. $5^{-3} =$
9. $2^{-3} =$
10. $8^2 =$
11. $4^2 =$
12. $3^3 =$
13. $3^{-3} =$
14. 2^{-1}
15. $7^{-2} =$
16. $\left(\frac{1}{2}\right)^{-3}$
17. $\left(\frac{3}{4}\right)^2$
18. $\left(\frac{2}{3}\right)^{-2}$
19. $\left(\frac{4}{5}\right)^2$
20. $\left(\frac{1}{3}\right)^3$
21. $\left(\frac{1}{8}\right)^{-2}$
22. 7^{-2}
23. $(-7)^{-2}$
24. $(-7)^2$
25. $\left(-\frac{2}{3}\right)^2$
26. $\left(-\frac{2}{3}\right)^{-2}$
27. $(-3)^2$
28. $(-3)^{-2}$
29. $(-6)^2$
30. $(-6)^{-2}$