



Name: _____

Due Date: _____

Teacher: _____

Parent Sign: _____

Math Worksheet for 8th Grade

Approximating irrational numbers

1. Approximate $\sqrt{2}$ to the nearest hundredth.
2. Approximate $\sqrt{3}$ to the nearest hundredth.
3. Approximate $\sqrt{5}$ to the nearest hundredth.
4. Approximate $\sqrt{8}$ to the nearest hundredth.
5. Find $\sqrt{50}$ and round to the nearest hundredth.
6. Without a calculator, write $\sqrt{18}$ in simplest radical form. Then approximate its value to the nearest hundredth.
7. Which is larger: $\sqrt{2}$ or 1.42?
8. Which is larger: $\sqrt{3}$ or 1.7?
9. Order these numbers from least to greatest: 1.4, $\sqrt{2}$, 1.41.
10. Order these numbers from least to greatest: $\sqrt{5}$, 2.2, 2.24.
11. Use a calculator: compare $\sqrt{72}$ and 8.4. Which is larger?
12. Use a calculator: is $\sqrt{99}$ greater than 9.94?
13. Approximate $\sqrt{12}$ to the nearest hundredth.
14. Approximate $\sqrt{20}$ to the nearest hundredth.
15. What is $\sqrt{125}$ approximated to the nearest hundredth?
16. Compare without a calculator: which is larger— $\sqrt{45}$ or 6.7? (Hint: $\sqrt{45} = \sqrt{9 \cdot 5} = 3\sqrt{5}$ and you may use an approximation for $\sqrt{5}$.)
17. The side length of a square is $\sqrt{6}$ cm. What is the area of the square (in cm^2), rounded to the nearest hundredth?
18. A right triangle has legs of lengths 7 cm and 11 cm. Find the length of the hypotenuse and round to the nearest hundredth.
19. A rectangle measures 5.5 m by $\sqrt{2}$ m. Find the diagonal length of the rectangle, rounded to the nearest hundredth.
20. A circular garden has radius $\sqrt{3}$ meters. Find the area (use 3.1416) and round the area to the nearest hundredth.
21. Which is greater: $\sqrt{32}$ or 5.65?
22. Which is greater: $2\sqrt{3}$ or 3.45? (Approximate as needed.)
23. Without calculator, simplify $\sqrt{72}$; then approximate its decimal value to the nearest hundredth.
24. Compare and state which is larger: $\sqrt{7}$ or 2.64.
25. Approximate $\sqrt{28}$ to the nearest hundredth.
26. Round $\sqrt{40}$ to the nearest hundredth.
27. A square tile has diagonal 5 cm. What is the side length of the tile? Round to the nearest hundredth (side = $5/\sqrt{2}$).
28. Compare using a calculator: which is larger— (use calculator) or $\sqrt{10}$? (Use calculator value and $\sqrt{10}$ calculator value.)
29. Evaluate and round to the nearest hundredth: $\sqrt{34}$.
30. Which is larger: $\sqrt{48}$ or 6.92?



Name: _____

Due Date: _____

Teacher: _____

Parent Sign: _____

Math Worksheet for 8th Grade

Approximating irrational numbers

31. Approximate $\sqrt{27}$ to the nearest hundredth.
32. True or False: $\sqrt{4.5} \approx 2.12$.
33. A ladder leans against a wall. The base is 6 ft from the wall and the ladder reaches a height of $\sqrt{58}$ ft on the wall. Is the ladder length longer than 8 ft? (Find ladder length and compare.)
34. A circular plate has area 50 square cm. What is the radius of the plate? Give answer as a decimal rounded to the nearest hundredth.
35. Which is larger: $\sqrt{85}$ or 9.22?
36. Evaluate $\sqrt{200}$ and round to the nearest hundredth.
37. Compare without calculator: which is larger— $\sqrt{99}$ or 9.95?
38. A square has area 20 m². What is the side length of the square, rounded to the nearest hundredth?
39. Compare the two values using a calculator and state which is greater: $\sqrt{2} + \sqrt{3}$ or 3.14.
40. Compute $\sqrt[3]{3} \times \sqrt[3]{12}$. Simplify exactly and then approximate to the nearest hundredth.
41. Approximate $\sqrt{14}$ to the nearest hundredth.
42. True or False: $\sqrt{11} \approx 3.31$.
43. Compare and order these three from least to greatest: $\sqrt{6}$, 2.44, 2.45.
44. A rectangular poster has width 8 cm and diagonal $\sqrt{170}$ cm. What is the height of the poster? Round to the nearest hundredth.
45. A wheel has diameter $\sqrt{50}$ cm. What is the circumference of the wheel (use $\pi \approx 3.1416$), rounded to the nearest hundredth?
46. Approximate $\sqrt{98}$ to the nearest hundredth.
47. Which is larger: $4\sqrt{2}$ or 5.65?
48. Use a calculator: subtract $\sqrt{7}$ from $(-\sqrt{7})$. Round your answer to the nearest hundredth.
49. A square field has side length $\sqrt{34}$ meters. What is the perimeter of the field, rounded to the nearest hundredth?
50. A coffee mug has base radius 3 cm. The area of the top circle is $\pi \cdot (3)^2 = 9\pi$. If the area were instead $\sqrt{90}\pi$ (i.e., radius $\sqrt{90}$), approximately how many times larger is the second circle's area compared to the first? Round your answer to the nearest hundredth.