Math Worksheet for 6th Grade

Powers of fractions and decimals

Name: Due Date: Teacher: Parent Sign:

Questions (1–50)

1. Compute $(\frac{1}{2})^2$.
2. Compute $(\frac{1}{2})^3$.
3. Compute $(\frac{3}{4})^2$.
4. Compute $(\frac{3}{4})^3$.
5. Compute $(\frac{2}{3})^2$.
6. Compute $(\frac{5}{6})^2$.
7. Compute $(\frac{5}{6})^3$.
8. Compute $(\frac{4}{5})^2$.
9. Compute $(\frac{4}{5})^3$.
10. Compute $(\frac{7}{2})^2$.
11. Compute $(\frac{1}{3})^4$.
12. Compute $(\frac{2}{5})^3$.
13. Compute $(\frac{9}{10})^2$.
14. Compute $(\frac{9}{10})^3$.
15. Compute $(0.2)^2$.
16. Compute $(0.2)^3$.
17. Compute $(0.5)^4$.
18. Compute $(0.25)^2$.
19. Compute $(1.2)^2$.
20. Compute $(1.5)^3$.
21. Compute $(0.75)^2$.
22. Compute $(0.75)^3$.
23. Compute $(0.1)^3$.
24. Compute $(0.01)^2$.
25. Compute $(\frac{3}{8})^2$.

Word problems (26–50)

26. A square tile has side length 0.6 m. What is its area?
27. A small cube has an edge of $\frac{1}{2}$ cm. What is its volume?
28. A square floor tile has side length $\frac{3}{4}$ m. What is its area in square meters?
29. A medicine's concentration halves every hour. If it starts at 100 $\frac{mg}{L}$, what fraction (and amount) remains after 3 hours?

30. A light bulb's brightness falls to 90% (0.9) each minute. If it starts at 200 lumens, what is the brightness after 2 minutes?

31. A poster is 0.8 m on a side. What is its area?

32. A ribbon 0.4 m long is folded in half three times. How long is the ribbon after the three folds?

33. A painting is copied at one-third the width and one-third the height. If the original area is 90 cm^2, what is the area of the copy?

34. What is the probability of flipping heads twice in a row with a fair coin?

35. A square field has area 81 m^2. If each side is reduced to two-thirds of its original length, what is the new area?

36. A rectangular carpet's linear dimensions are scaled by $\frac{3}{4}$. If the original area is 160 m^2, what is the new area?

37. A model is made at 1:10 scale (linear scale 0.1). If the original object's volume is 8000 cm^3, what is the model's volume?

38. A square garden has side length $\frac{2}{5}$ m. What is its area in square meters?

39. A file is reduced to 40% (0.4) of its size during compression. If compression is applied twice, what fraction of the original size remains? If the original file was 50 MB, what is its size after two compressions?

40. A sponge volume becomes 90% of its previous volume after each wash. If it starts at 500 cm^3, what is the volume after 3 washes?

41. A square park has side length $\frac{7}{10}$ km. What is its area in square kilometers?

42. A map is enlarged by a factor of $\frac{3}{2}$ in linear dimensions. If the real area shown was 40 km^2, what area does the enlarged map represent (use the scale factor for area)?

43. The chance of drawing a red marble from a bag is $\frac{3}{5}$. If you draw a marble, return it, then draw again, what is the probability both draws are red?

44. A square tile has side 1.25 m. What is its area?

45. A 0.75 m ribbon is folded in half twice. How long is the ribbon after the two folds?

46. What is 0.05 squared?

47. A square has side $\frac{4}{7}$ m. What is its area?

48. A cube has edge length 0.2 m. What is its volume?

49. A store reduces a price by 30% (i.e., multiplies by 0.7) and then reduces the result by another 30%. If the original price is \$200, what is the final price?

50. A square board has side length $\frac{5}{8}$ m. What is its area in square meters?