

Review: Radical Expressions

Simplify each expression

1) $\sqrt{40}$

2) $\sqrt{180}$

3) $\sqrt{80}$

4) $-3\sqrt{40}$

5) $\frac{2}{5}\sqrt{75}$

6) $\frac{2}{3}\sqrt{54}$

7) $-6\sqrt{2} \cdot 5\sqrt{10}$

8) $\frac{1}{3}\sqrt{6} \cdot \sqrt{9}$

9) $3\sqrt{6} \cdot 2\sqrt{2}$

10) $-5\sqrt{10} \cdot 3\sqrt{40}$

11) $4\sqrt{6} \cdot \sqrt{3}$

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

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

14) $\sqrt{\frac{12}{9}}$

15) $\frac{2\sqrt{3}}{\sqrt{10}}$

16) $\frac{3}{\sqrt{8}}$

17) $\frac{3\sqrt{5}}{\sqrt{12}}$

18) $\frac{\sqrt{4}}{\sqrt{7}}$

19) $\sqrt{\frac{9}{36}}$

20) $\sqrt{7} - 3\sqrt{5} + 2\sqrt{7} + \sqrt{5}$

21) $\sqrt{27} + \sqrt{48}$

22) $2\sqrt{6} - 4\sqrt{24} + \sqrt{12}$

23) $\sqrt{108} - \sqrt{27} - \sqrt{12}$

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Solve each equation. Check for extraneous solutions.

24) $\sqrt{w} + 9 = 0$

25) $\sqrt{x} - 6 = 4$

26) $\sqrt{x+1} - 3 = 2$

27) $2 = 3 + \sqrt{x-2}$

28) $6 = -2 + 4\sqrt{x}$

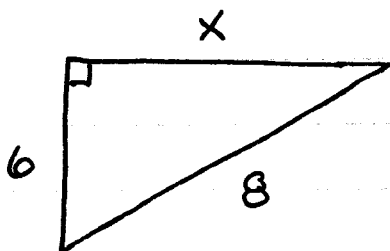
29) $\frac{1}{2}\sqrt{x+3} - 1 = 3$

30) $\sqrt{x+6} = x$

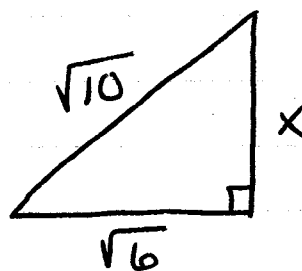
31) $\sqrt{x+1} = x-1$

Find each missing side length.

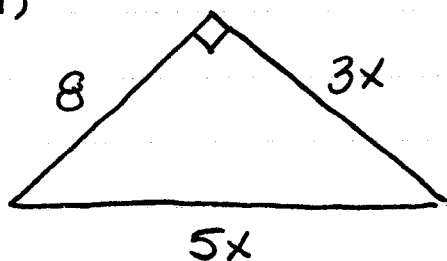
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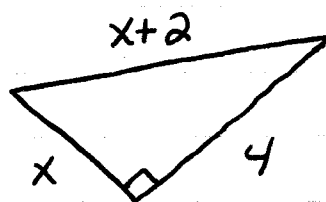
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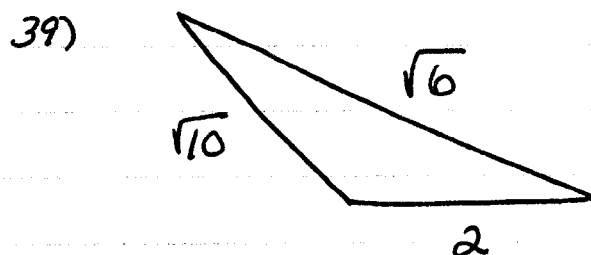
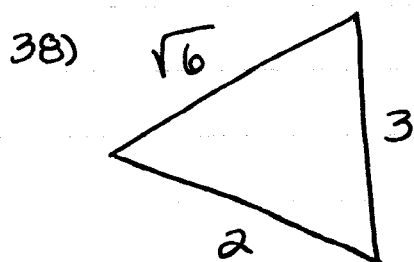
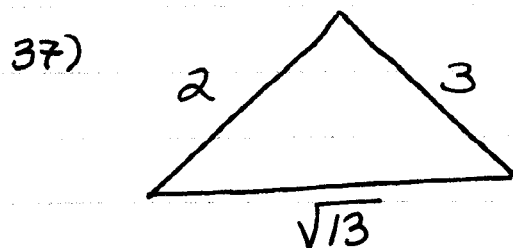
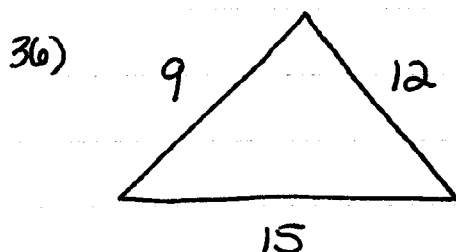


35)



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Which triangles are right triangles?



Word Problems: For each problem, draw a diagram, define a variable & solve.

40) A rectangle is 18 inches long & 6 inches wide. How long is its diagonal?

41) A square has a diagonal that measures 6 inches. Find the perimeter of the square.

42) A baseball player can throw a ball a maximum of 120 ft. if he stands on 2nd base, can he throw the ball to home plate? (the distance between bases is 90 ft.)

Answers:

1) $2\sqrt{10}$

2) $6\sqrt{5}$

3) $4\sqrt{5}$

4) $-6\sqrt{10}$

5) $2\sqrt{3}$

6) $2\sqrt{6}$

7) $-60\sqrt{5}$

8) $\sqrt{6}$

9) $12\sqrt{3}$

10) -300

11) $12\sqrt{2}$

12) $\sqrt{2}$

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

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

15) $\frac{\sqrt{30}}{5}$

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

17) $\frac{\sqrt{15}}{2}$

18) $\frac{2\sqrt{7}}{7}$

19) $\frac{1}{2}$

20) $3\sqrt{7} - 2\sqrt{5}$

21) $7\sqrt{3}$

22) $-6\sqrt{6} + 2\sqrt{3}$

23) $-\sqrt{3}$

24) $\emptyset$

25) $x = 100$

26) $x = 24$

27) $\emptyset$

28) $x = 4$

29) $x = 61$

30) $x = 3$

31) $x = 3$

32) $x = 2\sqrt{7}$

33) $x = 2$

34) $x = 2$

35) $x = 3$

36) right

37) right

38) no

39) right

40) $6\sqrt{10}$ in

41) $12\sqrt{2}$ in

42) no