Algebra 1

Chapter 10 Review

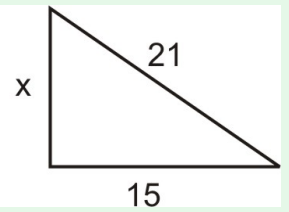
10.1-10.6

Find the missing side length

$a^2+b^2=c^2$

$x^2+15^2=21^2$

$x=\sqrt{21^2-15^2}\approx 14.7$



Determine whether the given length can be side lengths of a right triangle

8, 40, 41

$8^2+40^2 \stackrel{?}{=} 41^2$

$1664 \neq 1681$

NO!

Simplify: $\frac{3}{4}\sqrt{14t^3}\cdot\sqrt{28t}$

$\frac{3}{4}\sqrt{392t^4} = \frac{3}{4}\sqrt{196\cdot 2t^4}$

$\frac{392}{2,196}$ -14^2

$\frac{3}{4}\cdot 14t^2\sqrt{2} = \frac{21}{2}t^2\sqrt{2}$

Simplify:

$(2\sqrt{3}+\sqrt{5})(6\sqrt{5}-4\sqrt{3})$

$12\sqrt{15}-8\sqrt{9}+6\sqrt{25}-4\sqrt{15}$

$8\sqrt{15}-8\cdot 3+6\cdot 5$

$8\sqrt{15}-24+30 = 8\sqrt{15}+6$

Simplify:

$$\frac{(\sqrt{3}-3)(\sqrt{3}-3)}{(\sqrt{3}+3)(\sqrt{3}-3)}$$

$$\frac{\sqrt{9}-3\sqrt{3}-3\sqrt{3}+9}{\sqrt{9}-3\sqrt{3}+3\sqrt{3}-9} = \frac{3-6\sqrt{3}+9}{3-9} = \frac{12-6\sqrt{3}}{-6}$$

$$-2+\sqrt{3}$$

Solve the radical equation. Check you solution.

$$4+\sqrt{\frac{y^2}{16}}=7$$

$-4 \quad -4$

$\sqrt{\frac{y^2}{16}}=3 \qquad \frac{\sqrt{y^2}}{\sqrt{16}}=3 \qquad \frac{y}{4}=3$

$4\cdot\frac{y}{4}=3\cdot 4 \qquad y=12\checkmark$

$4+\sqrt{\frac{12^2}{16}}=4+\sqrt{\frac{144}{16}}=4+\sqrt{9}=4+3$

$7=7$

State the domain. Then graph the equation.

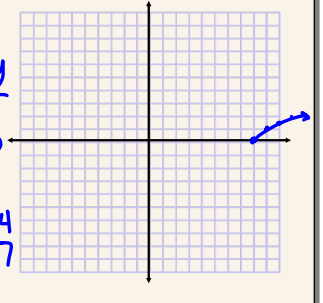
$y=\sqrt{x-8}$

$x-8\geq 0$

$+8 \quad +8$

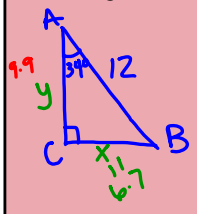
D: $x\geq 8$

x	y
7	-
8	0
9	1
10	1.4
11	1.7



Suppose a right triangle ABC has right angle C. Find the measures of the other sides to the nearest tenth.

Length of $\overline{AB}$ = 12, measure of angle A = 34°



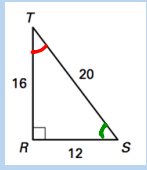
$\sin(34) = \frac{x}{12}$

$x = 12\sin(34) = 6.7$

$\cos(34) = \frac{y}{12}$

$y = 12\cos(34) = 9.9$

Find the sine, cosine, and tangent of every acute angle.



$\sin(T) = \frac{12}{20}$

$\cos(T) = \frac{16}{20}$

$\tan(T) = \frac{12}{16}$

$\sin(S) = \frac{16}{20}$

$\cos(S) = \frac{12}{20}$

$\tan(S) = \frac{16}{12}$

SOH CAH TOA

Solve the radical equation. Check you solution.

$$n\sqrt{2} = \sqrt{9 - 3n}$$

$(n\sqrt{2})^2 = (\sqrt{9-3n})^2$

$n^2 \cdot 2 = 9 - 3n$

$2n^2 + 3n - 9 = 0$

$(n+3)(2n-3) = 0$

$n+3=0$ $\quad 2n-3=0$

$n = -3$ $\quad n = \frac{3}{2}$ ✓

$-3\sqrt{2} = \sqrt{9-3(-3)}$ $\quad \frac{3}{2}\sqrt{2} = \sqrt{9-3(\frac{3}{2})}$

$-3\sqrt{2} = \sqrt{18}$ $\quad 2.12 = 2.12$

$-3\sqrt{2} \neq 3\sqrt{2}$

Simplify:

$$6\sqrt{8} - 2\sqrt{50}$$

$6\sqrt{4\cdot 2} - 2\sqrt{25\cdot 2}$

$6\cdot 2\sqrt{2} - 2\cdot 5\sqrt{2}$

$12\sqrt{2} - 10\sqrt{2}$

$2\sqrt{2}$

SIMPLIFY:

$5\sqrt{18} + 4\sqrt{32}$

$5\sqrt{9 \cdot 2} + 4\sqrt{16 \cdot 2}$

$5 \cdot 3\sqrt{2} + 4 \cdot 4\sqrt{2}$

$15\sqrt{2} + 16\sqrt{2} = 31\sqrt{2}$

Simplify: $\sqrt{3}(\sqrt{12} + 4)$

$\sqrt{36} + 4\sqrt{3}$

$6 + 4\sqrt{3}$

Chapter 10 Review Homework:

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