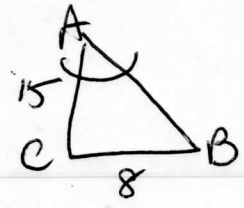
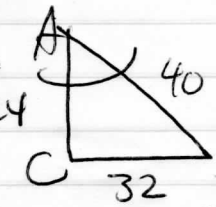
MR12 Final Review Ans. Key.

(1) $\sqrt{80}+3\sqrt{45}$
$\sqrt{16}\sqrt{5}+3\sqrt{9}\sqrt{5}$
$4\sqrt{5}+3\cdot3\sqrt{5}$
$4\sqrt{5}+9\sqrt{5}=13\sqrt{5}$

(2) 

$\cot A = \frac{1}{\tan A}$
$\tan A = \frac{8}{15}$ so $\cot A = \frac{15}{8}$
(4) $\frac{15}{8}$

(7) $\sqrt[3]{32x^6y^4}$
$\sqrt[3]{4\cdot2\cdot2\cdot2\cdot x^2\cdot x^2\cdot x^2\cdot y\cdot y\cdot y\cdot y}$
$2x^2y\sqrt[3]{4y}$

(11) 

$\sec A = \frac{40}{24}$
$\cos A = \frac{24}{40}$
$\csc = \frac{40}{32}$
$\sin = 32/40$

(20) $\frac{5}{2-\sqrt{12}}\left(\frac{2+\sqrt{12}}{2+\sqrt{12}}\right) = \frac{10+5\sqrt{12}}{4+2\sqrt{12}-2\sqrt{12}-\sqrt{144}} = \frac{10+5\sqrt{4}\sqrt{3}}{4-12} = \frac{10+10\sqrt{3}}{-8}$
$= \frac{5+5\sqrt{3}}{-4}$

(22) $x^2-2x-3>0$
$(x-3)(x+2)$
$x=3 \quad x=-2$

(1) 

greater > or Less < and GOLA

(23) $y=-5\sin\frac{1}{3}\left(x-\frac{\pi}{2}\right)$ — horizontal shift
amplitude ↙ ↓ frequency

Period $=\frac{2\pi}{b} = \frac{2\pi}{\frac{1}{3}} = 2\pi\div\frac{1}{3} = 2\pi\cdot3 = 6\pi$

(27) $81x^2-441y^2$
$9(9x^2-49y^2)$
$9(3x-7y)(3x+7y)$
$9(3x-7y)(3x+7y)$

30. $\left(x^0+x^{\frac{3}{3}}\right)^{-1} \quad x=64$
$64^0+64^{3/3} =$
$(1+64)^{-1}$
$(17)^{-1} = \frac{1}{17}$

(31) $\sum_{k=2}^{7} 4(3)^{k-1}$

k	$4(3)^{k-1}$	y
2	$4(3)^{2-1}$	12
3	$4(9)^{3-1}$	36
4	$4(3)^{4-1}$	108
5	$4(3)^{5-1}$	324
6	$4(3)^{6-1}$	972
7	$4(3)^{7-1}$	2916
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