Math 10C

Name: KEY

Review #2

1. Simplify. Answer with positive exponents.

a. $\frac{36x^4y^1}{9x^2y^5}$

$\frac{4x^2y^{-4}}{1}$

$\frac{4x^2}{y^4}$

b. $(2x^4y^7)^2(-3x^{-2}y)^2$

$4x^8y^{14}$

c. $\left(\frac{-4a^2}{100b^6}\right)^{-2}$

$\left(\frac{100b^6}{-4a^2}\right)^2$

$\left(\frac{-25b^6}{a^2}\right)^2$

$\frac{625b^{12}}{a^4}$

d. $(2x^4y^7)(-3x^{-2}y)^2$

$(2x^4y^7)(9x^{-4}y^2)$

$18y^9$

e. $\frac{-25c^{10}d^1e^{-3}}{5c^2d^6e^{+3}}$

$\frac{-5c^8d^{-5}}{1}$

$\frac{-5c^8}{d^5}$

2. Match each root with the most simplified form.

Column A	Column B
$\sqrt[3]{128}$ $\sqrt[3]{64}\ \sqrt[3]{2}$	$10\sqrt{2}$
$2\sqrt{50}$ $\sqrt{25}\times\sqrt{2}$	$10\sqrt[3]{6}$
$\sqrt[3]{-40}$ $\sqrt[3]{-8}\times\sqrt[3]{5}$	$4\sqrt{2}$
$\sqrt{32}$ $\sqrt{16}\times\sqrt{2}$	$-2\sqrt[3]{5}$
$5\sqrt[3]{48}$ $\sqrt[3]{8}\times\sqrt[3]{6}$	$12\sqrt{3}$
$3\sqrt{48}$ $\sqrt{16}\ \sqrt{3}$	$4\sqrt[3]{2}$

3. Fill in the table below

Factor Form	Expanded form
$(x+3)(2x-5)$	$2x^2-5x+6x-15$ $2x^2+1x-15$
$(3x-2)(4x^2+5x-7)$ $12x^3+15x^2-21x-8x^2-10x+14$	$12x^3-7x^2-31x+14$
$x^2+9x \mid -2x-18$ $x(x+9) \mid -2(x+9)$ $(x-2)(x+9)$	$x^2+7x-18$ $\times 18$ -1 $9 \quad 2$
$4(x-5)(x+5)$	$4x^2-100$ GCF: 4 $4(x^2-25)$ difference of squares
$8x^2+12x \mid -10x-15$ $4x(2x+3) \mid -5(2x+3)$ $(4x-5)(2x+3)$	$8x^2+2x-15$ $\times 120$ -2 $12 \quad 10$
$3(2x-3)^2$ $3(2x-3)(2x-3)$ $(6x-9)(2x-3)$	$(6x-9)(2x-3)$ $12x^2-18x-18x+27$ $12x^2-36x+27$
$4(6x^2+x-15)$ $6x^2+10x \mid -9x-15$ $2x(3x+5) \mid -3(3x+5)$ $4(2x-3)(3x+5)$	$24x^2+4x-60$ GCF: 4 $4(6x^2+x-15)$ $\times 90$ -1 $10 \quad 9$

4. Make a linear equation for $f(x) = 4x - 7$. Then determine

a. $f(-6) =$ $4(-6) - 7$

$f(-6) = -24 - 7$

$f(6) = -31$

b. $f(x) = 21$

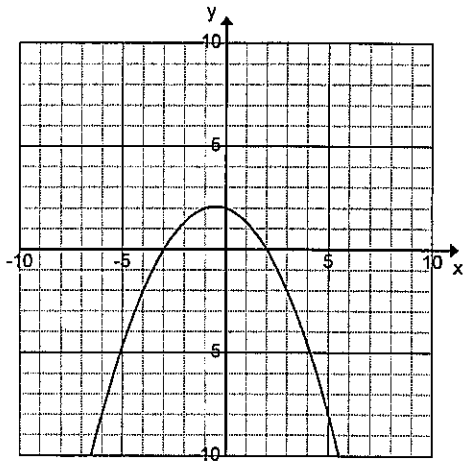
$21 = 4x - 7$

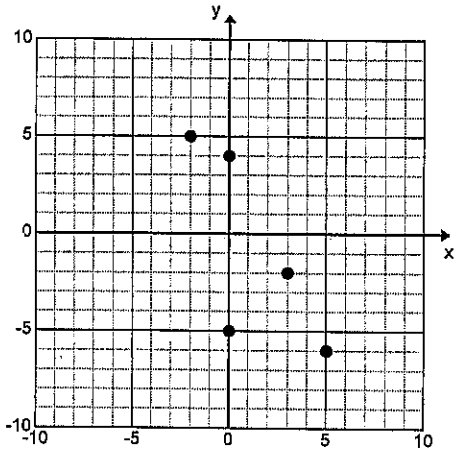
$+7 \quad +7$

$\frac{28}{4} = \frac{4x}{4}$

$7 = x$

5. State the Domain and Range of the following graph.





Domain: $\{x \in R\}$

Range: $\{y \leq -2\}$

Is this a function: (yes) or no

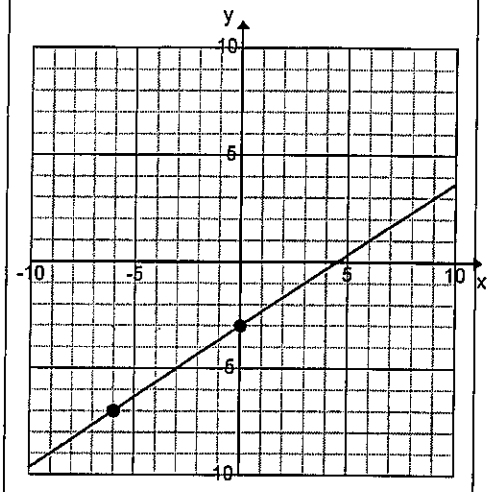
Domain: $\{-2, 0, 3, 5\}$

Range: $\{-6, -5, -2, 4, 5\}$

Is this a function: yes or (no)

6. Given the following graphs, determine the slope and the equation of the line in the stated format.

$Ax+By+C=0$



$m=\frac{4}{6}$ $b=-3$

$m=\frac{2}{3}$

Find the slope. Find the equation in General Form. Find the equation in slope/y-intercept form.

$y=mx+b$

$m=\frac{2}{3}$

$y=\frac{2}{3}x-3$

$x^3 \quad y=\frac{2}{3}x-3 \quad x^3$

$3y=2x-9$

$2x-3y-9=0$

Given: $y=\frac{3}{2}x-12$

Change the equation to General Form. Find the x-intercept. Find the y-intercept.

$x2 \quad y=\frac{3}{2}x-12 \quad x2$

$2y=3x-24$

$3x-2y-24=0$

$3x-2(0)-24=0$

$3x=24$

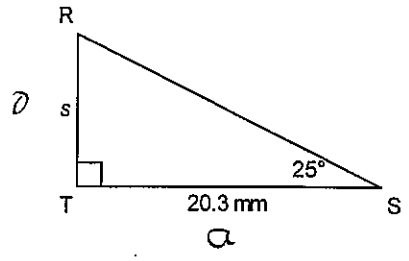
$x=8$

$3(0)-2y-24=0$

$-2y=24$

$y=-12$

7. Solve for the missing side, to the nearest tenth.



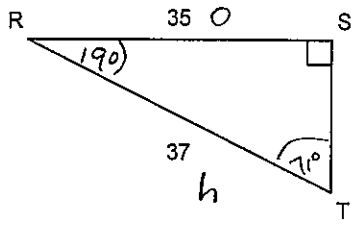
a

$\tan\theta = \frac{o}{a}$

$\tan 25^\circ = \frac{s}{20.3}$

$s = 20.3 \times \tan 25 = 9.5$

8. Solve for the missing angles, to the nearest whole number.



$\sin\theta = \frac{o}{h}$

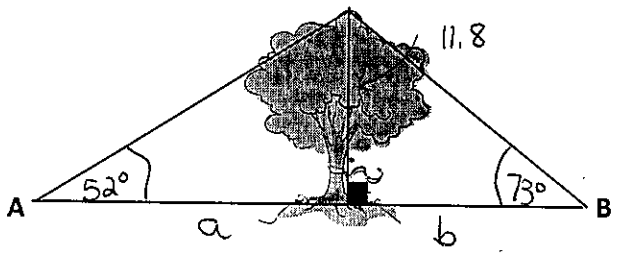
$\sin\theta = \frac{35}{37}$

$\sin^{-1}\left(\frac{35}{37}\right)$

$\angle T = 71^\circ$

$180^\circ - (90^\circ + 71^\circ) = 19^\circ$

9. The angle of elevation to the top of a tree from point A is 52º. From point *B*, on the other side of the tree, the angle of elevation is 73º. If the tree is 11.8 m tall, then how far apart are *A* and *B* to the nearest tenth of a metre?



$\tan\theta = \frac{o}{a}$

$\tan 52^\circ = \frac{11.8}{a}$

$a = \frac{11.8}{\tan 52^\circ}$

$a = 9.2$

$\tan 73^\circ = \frac{11.8}{b}$

$b = \frac{11.8}{\tan 73^\circ}$

$b = 3.6$

$9.2 + 36 = 12.8\text{m}$