

MATH 0200

Practice Selected Questions

VIDEOS

CH 1013

② Simplify

$$|-2 - (-8)|$$

④ Simplify

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

⑧ $p = 2(a+b)$

$b =$

⑫ $kx + y = 4$

$x =$

⑬ $\frac{2}{x} = \frac{2}{k} + c$

$x =$

⑭ $ax = b - cx$

$x =$

⑮ $x - 10 = 5x - 10$

$x =$

⑰ $3x = 7 - 5x$

$x =$

⑱ $1 + 2x \leq 3x - 5$

Solve for x

⑲ $3a > a + 8$

Solve for a

⑳ $\frac{x}{4} - \frac{3x}{8} > 0$

Solve for x

㉒ Simplify $(1+xy)(1-xy)$

㉓ Simplify $(x-8y)(x-8y)$

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questions for
a quick review

MATH Placement
for Elementary
and Intermediate
ALGEBRA

1

(29) factor $3x^3 - 9x^2 + 6x$

(30) factor $b^2 - bc - 2c^2$

(32) factor $\frac{a^2}{4} - \frac{1}{9}$

(33) Evaluate if $a=3$, $b=-5$, $\frac{a-b}{b}$

(35) Simplify $(3\sqrt{2y})^2$

(36) Simplify $8\sqrt{5} + 3\sqrt{5} - \sqrt{5}$

(39) Simplify $\frac{1}{x+2} + \frac{1}{x}$

(49) $\frac{x+2}{3} = \frac{2x-1}{4}$ $x =$

(50) $x+2y=7$
 $x=5y$ $(x,y) =$

(65) Simplify $(x^2 - 3x + 2) - (3x^2 - 5x - 1)$

(72) $2x - 3(x - 4) = -5$ $x =$

(73) Simplify $(3-2) - (2-3)$

76) $2(2x-7) < 3x$

Solve for x

3

88) $6-x = -2(6-x)$

x =

93) $8z^2 + cz + 35 = (4z+7)(2z+5)$ c =

98) $4x-8 = 2x$ then $12x =$

102) Simplify $(4x-3y)^2$

108) $x^2 - x = 2$

x =

109) factor $25x^2 - 64y^2$

110) Find y if $y = -2x^2 - 5x + 2$

x = -4

113) factor $x^2 - 4x - 12$

116) $x^2 - 6x - 40 = 0$

x =

121) Simplify $(x-2)x + (2-x)3x$

122) Find the area of a circle with a radius = $(x-4)$ feet.

123) $x^2 + 3 = 4x$

x =

124 Simplify $\frac{-24x^2y^2 + 12xy^2 + 28xy}{4xy}$

133 $\frac{4x}{3} = 6 - \frac{x}{4}$ $x =$

4

137 Simplify $\frac{20x^3y^4}{30x^5y^2}$

139 Simplify $\frac{x}{4x-16} \div \frac{x^2-2x}{x-4}$

140 Simplify $\frac{1 + \frac{2}{x}}{\frac{3}{x^2}}$

141 $y = mb^2$ $b =$

142 $\frac{x}{2} - \frac{1}{4} = 3 + \frac{5x}{6}$ $x =$

143 Simplify $\left(\frac{x^3}{18y}\right)\left(\frac{6y}{4x^2}\right)$

150 Simplify $\frac{2}{3x^2} - \frac{3}{x^2-2x}$

152 $2x - 8y = 10$ $x =$

158 $f(x) = -2x^2 - 4x + 6$ $f(-5) =$

MATH 0200

(159) $f(x) = 4x^2 - 8x - 9$ and $g(x) = -2x^2 - 3x + 5$, $(f-g)(x)$

(161) $18 - 3x \geq -12$ solve for x

(162) $|r - 2| = 5$ solve for r

(163) $|x + 9| < 15$ solve for x

(164) $|x + 6| > 16$ solve for x

(166) Find the slope of the line
thru the points $(8, 3)$ and $(-4, 4)$

(167) Find the equation of the line with
the slope $m = 3$ thru point $(-3, 6)$

(168) Simplify $\sqrt{180}$

(169) Simplify $\sqrt{169x^6y^9z^9}$

(172) $\sqrt{7-x} = x-1$ solve for x

(174) Simplify $\sqrt[3]{-27a^{11}b^{13}}$

(175) $\sqrt[3]{x+3} = 4$ solve for x

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5.

MATH 0203

(176) $h(x) = 3x^2 - 7x - 4$, $h(-5)$

(177) $f(x) = |5x - 4|$, $f(-3)$

(180) $x^2 - 6x + 8 = 0$ use the Quadratic formula to solve

(185) $f(x) = -x^2 + 4x + 5$, find vertex, $(-\frac{b}{2a}, f(-\frac{b}{2a}))$

(191) Simplify $(2 + 8i)(3 - 2i)$, $i^2 = -1$

(192) Simplify $\frac{2+i}{5-i}$, $i^2 = -1$

(193) $(x+4)^2 = -9$ Solve for x , $\sqrt{-1} = i$

(194) $2x - 3y = 2$
 $4x - 6y = 1$ Solve for x and y

(201) For $4x + 2y = 8$ determine the ordered pair that is a solution to the equation

- (A) (0, 2) (B) (2, 4) (C) (1, 2) (D) (2, 1)

(202) $N + D = 100$
 $.05N + .10D = 9.50$ Solve for N and D

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203) $f(x) = 4x^2 - 3$ and $g(x) = 5x + 4$, $(f \cdot g)(x)$

204) $f(x) = 3x - 6$ and $g(x) = x^2 - 4$, $(\frac{f}{g})(x)$

7.

206) For $A^2 + B^2 = C^2$ the Pythagorean Theorem
if $A=3$, $B=4$, then $C=$

207) $-4 < 2x + 6 < 4$ Solve for x

209) Multiply $(4 + 5\sqrt{6})(4 - 5\sqrt{6})$

210) Find the slope and the y -intercept
using the slope-intercept form of the
equation of the line and graph.

$$y = 2x + 4$$

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Difference of Squares

$$A^2 - B^2 = (A + B)(A - B)$$

Sum of Cubes

$$A^3 + B^3 = (A + B)(A^2 - AB + B^2)$$

Difference of Cubes

$$A^3 - B^3 = (A - B)(A^2 + AB + B^2)$$

Slope

$$m = \frac{y_1 - y_2}{x_1 - x_2}$$

Slope Intercept

$$y = mx + b$$

Point Slope

$$y - y_1 = m(x - x_1)$$

Two Point

$$y - y_1 = \frac{y_1 - y_2}{x_1 - x_2}(x - x_1)$$

Distance

$$d = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$

$$\text{mid} = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

Domain

$$f(x) = \sqrt{Ax + B} \quad \text{set } Ax + B \geq 0$$

Quadratic Formula

$$ax^2 + bx + c = 0$$

$$a = \underline{\quad} \quad b = \underline{\quad} \quad c = \underline{\quad}$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

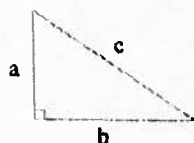
$$i^2 = -1 \quad \sqrt{-1} = i$$

$$a \neq 0 \quad a^0 = 1 \quad \frac{0}{a} = 0$$

$$\frac{a}{0} = \text{undefined} \quad \frac{0}{0} = \text{indeterminate}$$

Pythagorean Theorem

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



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Absolute Value

$$|x| = a \quad x = -a \quad \text{or} \quad x = a$$

$$|x| < a \quad -a < x < a$$

$$|x| > a \quad x < -a \quad \text{or} \quad x > a$$

Vertex

$$\begin{matrix} \text{Min} \\ \text{Max} \end{matrix} = \left(-\frac{b}{2a}, f\left(-\frac{b}{2a}\right) \right)$$

Average Rate of Change

$$x = A \quad \text{to} \quad x = B$$

$$\frac{f(B) - f(A)}{B - A}$$

Compounded Continuous

$$(\text{Population}) \quad A = Pe^{rt}$$

Compounded Monthly/Daily

$$A = P \left(1 + \frac{r}{N} \right)^{Nt}$$

Half Life

$$A = P \left(\frac{1}{2} \right)^{\frac{t}{N}}$$

Composites

$$(f - g)(x) = f(x) - g(x)$$

$$(f + g)(x) = f(x) + g(x)$$

$$(fg)(x) = f(x) * g(x)$$

$$\left(\frac{f}{g} \right)(x) = \frac{f(x)}{g(x)}$$

$$(f \circ g)(x) = f(g(x))$$

$$(g \circ f)(x) = g(f(x))$$

Difference Quotient

$$\frac{f(x+h) - f(x)}{h}$$

Amortization

$$A = P \frac{\left(\frac{r}{n} \right)}{\left(1 - \left(1 + \frac{r}{n} \right)^{-nt} \right)}$$

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Rules of ln/log

$$\ln(A) + \ln(B) = \ln(AB)$$

$$\ln(A) - \ln(B) = \ln\left(\frac{A}{B}\right)$$

$$\ln(A^N) = N \ln(A)$$

$$\ln(e) = 1$$

$$\ln(1) = 0$$

$$\ln(A) = \ln(B) \quad \text{then } A = B$$

Change of Base

$$\log_b(A) = \frac{\ln(A)}{\ln(b)}$$

$$\log_b(b) = 1$$

$$\log_b(y) = x \quad \text{then } b^x = y$$

$$A^x = A^y \quad \text{then } x = y$$

$$\text{If } \log_b(Ax + B) = \log_b(Cx + D)$$

$$\text{then } (Ax + B) = (Cx + D)$$

Same base power rule

$$\text{If } b^{Ax+B} = b^{Cx+D}$$

$$\text{then } Ax + B = Cx + D$$

$$\text{If } \log_b(Ax + B) = C$$

$$\text{then } b^C = Ax + B$$

Domain

$$f(x) = \log(Ax + B)$$

$$\text{set } Ax + B > 0$$

Circle Formula

$$(x - a)^2 + (y - b)^2 = r^2;$$

$$\text{Center}(a, b); \text{ Radius} = r$$

Summation

$$\sum_{x=a}^b (Ax + B) \rightarrow \text{Calculator: } \text{sum(seq}(Ax + B, x, a, b, 1))$$

$$(A + B)^N = {}_N C_0 (A)^N (B)^0 + {}_N C_1 (A)^{N-1} (B)^1 + \dots + {}_N C_N (A)^0 (B)^N$$