Honors Math 3

Quarter 1 More TEST Review

You may want to use another sheet of paper to work out the problems. :)

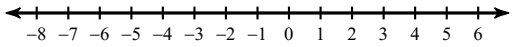
Solve each equation.

1) $-5 - 9\left|2b - 3\right| = -14$

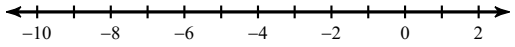
2) $10 + 10\left|7p + 10\right| = 40$

Solve each inequality and graph its solution.

3) $8 + 10\left|9 - 9p\right| > -82$



4) $9\left|2n + 8\right| - 2 \leq 70$



Solve each equation. Remember to check for extraneous solutions.

5) $3 + \left(r + 5\right)^{\frac{1}{2}} = 12$

6) $\sqrt{8 - x} + 2 = \sqrt{2x - 5}$

Evaluate each function.

7) $p(x) = 2x^2 - 3x$; Find $p\left(\frac{x}{4}\right)$

8) $g(t) = -t^2 - t$; Find $g(t - 4)$

Solve each equation.

9) $\left(\frac{1}{3}\right)^{2a+1} \cdot \left(\frac{1}{27}\right)^{2a-3} = 27$

10) $4^{-3x} \cdot 8^{3-x} = 8$

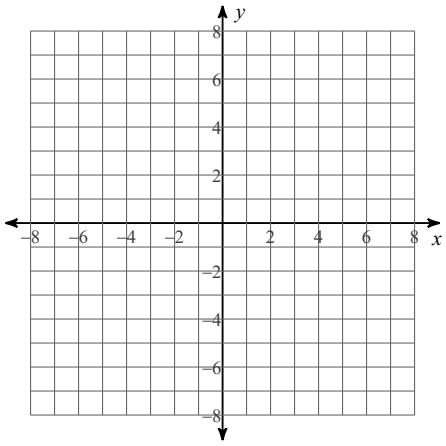
Solve each equation. Round your answers to the nearest hundreth.

11) $4^{4v} - 10 = 28$

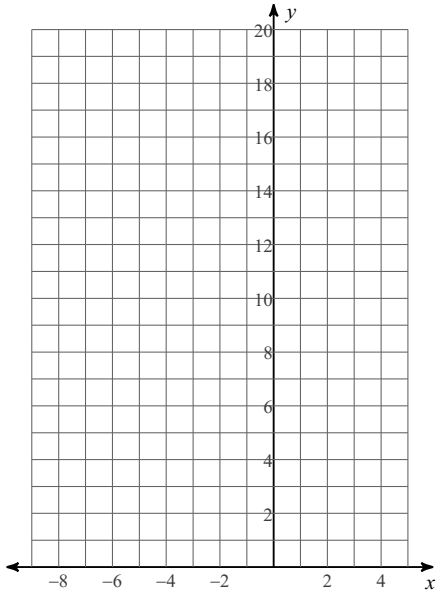
12) $-2 \cdot 4^{2p+3} = -92$

Sketch the graph of each function. State the asymptote, domain, range and end behavior.

13) $y = \log_3 (3x - 9) - 3$



14) $y = \frac{1}{4} \cdot \left(\frac{1}{2}\right)^{x+2} + 1$



Divide.

15) $(9x^3 - 17x^2 - 34x + 7) \div (x - 3)$

16) $(b^3 + 17b^2 + 65b - 67) \div (b + 9)$

Write a polynomial function of least degree with integral coefficients that has the given zeros.

17) $-4, \ -3 + i$

Find all roots. One root has been given.

18) $4x^4 - 19x^3 - 9x^2 + 19x + 5 = 0;\ 5$

19) $3x^5 - 17x^4 + 21x^3 + 27x^2 - 24x - 10 = 0;\ 3 + i$

Find all roots.

20) $2x^4 - 2x^3 + 5x^2 - 5x = 0$

21) $5x^4 + 20x^3 - 3x^2 - 12x = 0$

Condense each expression to a single logarithm.

22) $2\log_7 x + 5\log_7 y$

23) $12\log_7 x - 4\log_7 y$

24) $\log_7 5 + \log_7 8 + 6\log_7 11$

25) $4\log_8 2 - 2\log_8 11$

Solve each equation.

26) $\log_2 (5x^2 + 4) - 3 = \log_2 3$

27) $\log_9 (x - 1) = 2 + \log_9 (x + 1)$

28) $\log_9 5 - \log_9 (2x - 2) = \log_9 18$

29) $\log_3 6 + \log_3 (3x^2 - 5) = \log_3 2$

30) $\ln 4 + \ln (x^2 + 5) = \ln 72$

31) $\ln -2x + \ln 6 = 1$

Evaluate each expression.

32) $\log_5 1$

33) $\log_7 \frac{1}{343}$

34) $\log_{125} \frac{1}{5}$

35) $\log_4 64$

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Solve each equation.

1) $-5 - 9\left|2b - 3\right| = -14$

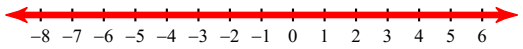
$\{2, 1\}$

2) $10 + 10\left|7p + 10\right| = 40$

$\left\{-1, -\frac{13}{7}\right\}$

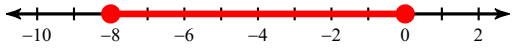
Solve each inequality and graph its solution.

3) $8 + 10\left|9 - 9p\right| > -82$



{ All real numbers. }

4) $9\left|2n + 8\right| - 2 \leq 70$



$-8 \leq n \leq 0$

Solve each equation. Remember to check for extraneous solutions.

5) $3 + (r + 5)^{\frac{1}{2}} = 12$

$\{76\}$

6) $\sqrt{8 - x} + 2 = \sqrt{2x - 5}$

$\{7\}$

Evaluate each function.

7) $p(x) = 2x^2 - 3x$; Find $p\left(\frac{x}{4}\right)$

$\frac{1}{8}x^2 - \frac{3}{4}x$

8) $g(t) = -t^2 - t$; Find $g(t - 4)$

$-t^2 + 7t - 12$

Solve each equation.

9) $\left(\frac{1}{3}\right)^{2a+1} \cdot \left(\frac{1}{27}\right)^{2a-3} = 27$

$\left\{\frac{5}{8}\right\}$

10) $4^{-3x} \cdot 8^{3-x} = 8$

$\left\{\frac{2}{3}\right\}$

Solve each equation. Round your answers to the nearest hundreth.

11) $4^{4v} - 10 = 28$

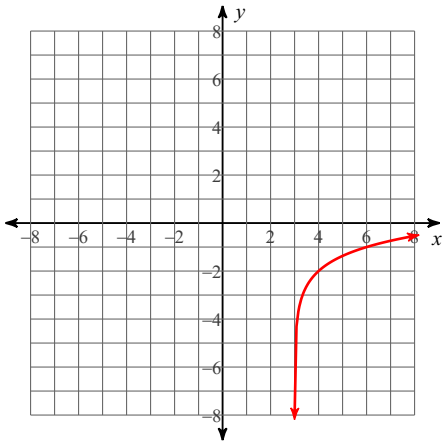
0.656

12) $-2 \cdot 4^{2p+3} = -92$

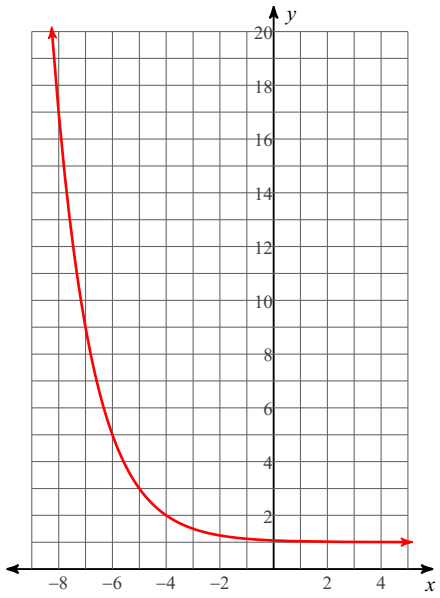
–0.1191

Sketch the graph of each function. State the asymptote, domain, range and end behavior.

13) $y = \log_3 (3x - 9) - 3$



14) $y = \frac{1}{4} \cdot \left(\frac{1}{2}\right)^{x+2} + 1$



Divide.

15) $(9x^3 - 17x^2 - 34x + 7) \div (x - 3)$

$9x^2 + 10x - 4 - \frac{5}{x-3}$

16) $(b^3 + 17b^2 + 65b - 67) \div (b + 9)$

$b^2 + 8b - 7 - \frac{4}{b+9}$

Write a polynomial function of least degree with integral coefficients that has the given zeros.

17) $-4, \quad -3 + i$

$f(x) = x^3 + 10x^2 + 34x + 40$

Find all roots. One root has been given.

18) $4x^4 - 19x^3 - 9x^2 + 19x + 5 = 0;\ 5$

$\left\{1, -\frac{1}{4}, -1, 5\right\}$

19) $3x^5 - 17x^4 + 21x^3 + 27x^2 - 24x - 10 = 0;\ 3 + i$

$\left\{-1, -\frac{1}{3}, 1, 3 + i, 3 - i\right\}$

Find all roots.

20) $2x^4 - 2x^3 + 5x^2 - 5x = 0$

$\left\{0, 1, \frac{i\sqrt{10}}{2}, -\frac{i\sqrt{10}}{2}\right\}$

21) $5x^4 + 20x^3 - 3x^2 - 12x = 0$

$\left\{0, -4, \frac{\sqrt{15}}{5}, -\frac{\sqrt{15}}{5}\right\}$

Condense each expression to a single logarithm.

22) $2\log_7 x + 5\log_7 y$

$\log_7 \left(y^5 x^2\right)$

23) $12\log_7 x - 4\log_7 y$

$\log_7 \frac{x^{12}}{y^4}$

24) $\log_7 5 + \log_7 8 + 6\log_7 11$

$\log_7 \left(40 \cdot 11^6\right)$

25) $4\log_8 2 - 2\log_8 11$

$\log_8 \frac{2^4}{11^2}$

Solve each equation.

26) $\log_2 \left(5x^2 + 4\right) - 3 = \log_2 3$

$\{2, -2\}$

27) $\log_9 (x - 1) = 2 + \log_9 (x + 1)$

No solution.

28) $\log_9 5 - \log_9 (2x - 2) = \log_9 18$ $\left\{\frac{41}{36}\right\}$

29) $\log_3 6 + \log_3 \left(3x^2 - 5\right) = \log_3 2$ $\left\{\frac{4}{3}, -\frac{4}{3}\right\}$

30) $\ln 4 + \ln \left(x^2 + 5\right) = \ln 72$

$\left\{\sqrt{13}, -\sqrt{13}\right\}$

31) $\ln -2x + \ln 6 = 1$ $\left\{-\frac{e}{12}\right\}$

Evaluate each expression.

32) $\log_5 1$

0

33) $\log_7 \frac{1}{343}$

-3

34) $\log_{125} \frac{1}{5}$ $-\frac{1}{3}$

35) $\log_4 64$

3

