MATH-AII

Review 11/22

[Exam ID:14HT3S

Exam not valid for Paper Pencil Test Sessions

1 $y = 1$

For non-zero denominators, which of the following is equivalent to $\frac{2a}{15b} - \frac{9b}{5}$ **?**

A $\frac{2a - 27b^2}{15b}$

No horizontal asymptote

B $\frac{a}{9}$

C $\frac{2a - 18b}{5}$

D $\frac{a}{5}$

$y = 0$

2 **Simplify:**

$$\frac{6x^2 - 54}{x^2 - 6x + 8} \div \frac{2x + 6}{x - 4}$$

A $\frac{x - 3}{x - 2}$

B $\frac{3(x - 3)}{x - 2}$

C $\frac{6(x - 3)}{x - 2}$

D $\frac{x - 3}{2(x - 2)}$

3 **For non-zero denominators, which of the following is equivalent to**

$$\frac{a^2 + a - 6}{a^2 - a - 12} \bullet \frac{2a^2 - a - 6}{a^2 - 6a + 8}?$$

A $\frac{a - 2}{2a + 3}$

B $\frac{(a - 2)(2a + 3)}{(a - 4)(a - 4)}$

C $a - 2$

D $(a - 2)(2a + 3)$

4 Directions: Click on a box to choose each expression you want to select. You must select all correct expressions.

Identify the expressions equivalent to $\frac{4x}{3(x - 4)}$.

- $\frac{4x^2 - 32x}{x^2 - 13x + 40} \div \frac{3x - 12}{x - 5}$
- $\frac{12x^2 + 8x}{3x^2 - 10x - 8} \cdot \frac{2x + 8}{6x + 24}$
- $\frac{8x^2 + 4x}{2x^2 + 7x + 3} \cdot \frac{x + 3}{12x - 48}$
- $\frac{8x^2 - 12x}{2x^2 - x - 3} \div \frac{3(x - 4)}{4x - 4}$

5 **Which expression is equivalent to $3\sqrt{20} - 4\sqrt{5} + 2\sqrt{25}$?**

A $4\sqrt{5}$
B $8\sqrt{5} + 10$
C $2\sqrt{5} + 10$
D $1\sqrt{40}$

6 **Which is equivalent to $\sqrt{20x^3y} \cdot \sqrt{3xy}$?**

A $2x^2y\sqrt{15}$
B $60x^2y$
C $2x^2\sqrt{15}$
D $2x^4y^2\sqrt{15}$

7 **Which expression is equivalent to the expression shown?**

$$\sqrt{\frac{11b^3}{16}}$$

A $\frac{b^2\sqrt{11b}}{4}$
B $\frac{11b^3}{4}$
C $\frac{b\sqrt{11b}}{4}$
D $\frac{\sqrt{11b^3}}{8}$
E $\frac{b\sqrt{11b}}{8}$
F $\frac{11b^3}{8}$

8 **Which statement is true?**

A $\sqrt[3]{9x^5} \cdot \sqrt[3]{3x^4} = 9^{\frac{3}{5}}x^{\frac{3}{5}} \cdot 3^{\frac{3}{4}}x^{\frac{3}{4}}$

B $\sqrt[3]{9x^5} \cdot \sqrt[3]{3x^4} = 9^{\frac{1}{3}}x^{\frac{5}{3}} \cdot 3^{\frac{1}{3}}x^{\frac{4}{3}}$

C $\sqrt[3]{9x^5} \cdot \sqrt[3]{3x^4} = 9^{\frac{1}{3}}x^{\frac{3}{5}} \cdot 3^{\frac{1}{3}}x^{\frac{3}{4}}$

D $\sqrt[3]{9x^5} \cdot \sqrt[3]{3x^4} = 9^{\frac{5}{3}}x^{\frac{5}{3}} \cdot 3^{\frac{4}{3}}x^{\frac{4}{3}}$

9 **Which is equivalent to (30 - *i*) - (18 + 6*i*)?**

A 12 - 7*i*

B 48 + 7*i*

C 28 + 6*i*

D 30 + 5*i*

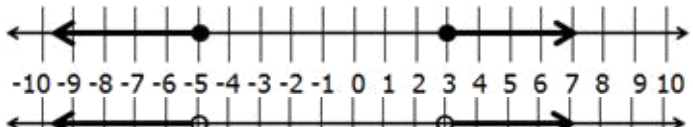
10 Directions: Click on a box to choose each statement you want to select. You must select all true statements.

Identify each statement that uses the identity property of multiplication.

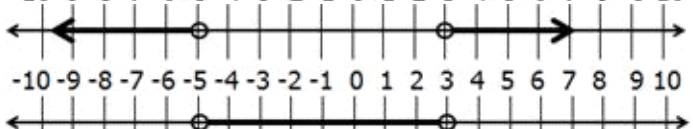
$2i + (6i \cdot 1) = 2i + 6i$
$(8i \cdot 0) \cdot 9 = 0 \cdot 9$
$0 + 4i \cdot 1 = 0 + 4i$
$8(1 \cdot 7i) = 8(7i)$
$5i + (0 + 3i) = 5i + 3i$

11 **Which graph shows the solution for |*x* + 1| > 4?**

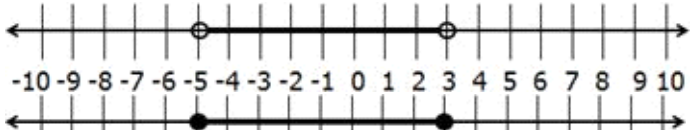
A



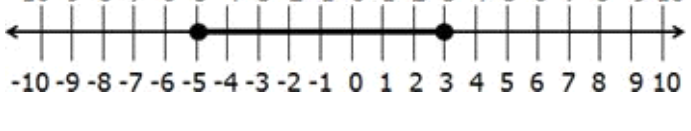
B



C



D



12

Which of the following inequalities best represents the graph above?

A $|x + 3| < 4$
B $|x - 1| < 3$
C $|x + 3| < 7$
D $|x - 7| < 4$

13 **What is the solution set of the equation?**

$$-11x^2 + 2x = 10$$

A $\left\{\frac{2i\sqrt{109}}{11}, \frac{-2i\sqrt{109}}{11}\right\}$
B $\left\{\frac{2\sqrt{109}}{11}, \frac{-2\sqrt{109}}{11}\right\}$
C $\left\{\frac{1+\sqrt{109}}{22}, \frac{1-\sqrt{109}}{22}\right\}$
D $\left\{\frac{1+i\sqrt{109}}{11}, \frac{1-i\sqrt{109}}{11}\right\}$

14 Directions: Click on a box to choose a root you want to select. You must select all correct roots.

Identify the roots for the equation $4x^2 - 2x + 2 = 0$.

$\frac{-i\sqrt{7}}{4}$	$\frac{1+2i}{4}$	$\frac{1-2i}{4}$
$\frac{1-i\sqrt{7}}{4}$	$\frac{i\sqrt{7}}{4}$	$\frac{1+i\sqrt{7}}{4}$

15 **What is the solution to $\frac{2}{d} + \frac{1}{4} = \frac{11}{12}$?**

A 0
B $\frac{8}{11}$
C 8
D 3

16 **What is the solution set for $\frac{5}{3} - \frac{2}{x} = \frac{8}{x}$ if $\neq 0$?**

A { 2 }

B $\left\{\frac{18}{5}\right\}$

C $\left\{\frac{26}{5}\right\}$

D { 6 }

17 **What is the solution set for $\sqrt{2x - 1} + 4 = 7$?**

A {5}

B {4}

C {1}

D {2}

18 **Which is a root of $f(x) = 0$ if**

$$f(x) = (x + 5)(x - 4)?$$

A 0

B 5

C -4

D -5

19 Directions: Click on a box to choose each equation you want to select. You must select all correct equations.

Identify each equation that has exactly two distinct imaginary roots.

$x^2 - 4x + 8 = 0$	$x^2 - 3x + 2 = 0$	$x^2 + 4 = 0$
$x^2 - 2 = 0$	$2x^2 - x + 5 = 0$	$4x^2 + 2 = 0$

20 **Center Middle School is having a pie eating contest and needs a team consisting of 5 people from Mrs. Brown's classroom. There are 20 students in Mrs. Brown's classroom. How many different teams could be formed?**

A 15,504

B 14,400

C 90

D 120

21 Directions: Click on a box to choose each answer you want to select. You must select all correct answers.

Identify each situation that can be answered using a combination.

Eight students are competing in a spelling contest. How many ways can they award a 1st, 2nd and 3rd place prize among the eight contestants?
Three people from a company of 50 employees are selected to go to a conference. How many groups of people could be selected?
Sara has a choice of 3 different colors from the box of 150 crayons to use in her picture. How many different color possibilities are there?
From a committee of 7 people, how many different ways can you pick a president, vice-president and secretary?

22 **Which statement describes all the vertical asymptotes of the function?**

$$f(x) = \frac{x^2 + 3x + 1}{4x^2 - 9}$$

A $x = \frac{3}{2}$ and $x = -\frac{3}{2}$

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

C $x = 9$

D $x = -4$

23 **What is the inverse of $f(x) = 2x - 2$?**

A $f^{-1}(x) = \frac{x + 2}{2}$

B $f^{-1}(x) = 2x + 2$

C $f^{-1}(x) = \frac{x}{2} + 2$

D $f^{-1}(x) = \frac{x - 2}{2}$

24 Directions: Click and drag each equation to the correct box.

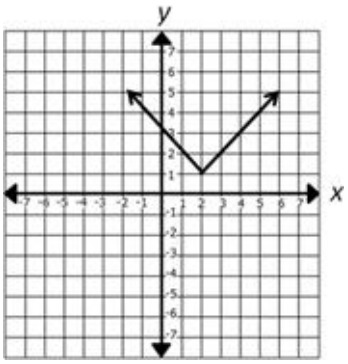
Place each equation of horizontal asymptote next to the correct function.

Equation	Equation of Horizontal Asymptote
$f(x) = \frac{x+1}{x-1}$	
$g(x) = \frac{x(x-1)}{x-1}$	
$h(x) = \frac{x}{2x-1}$	y =
$d(x) = \frac{5}{x-2}$	

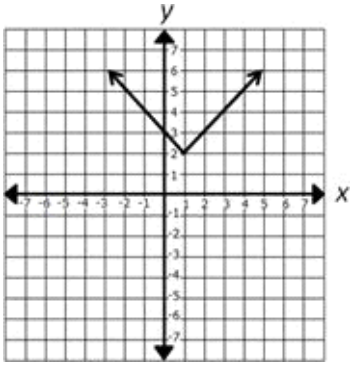
$\frac{1}{2}$

25 **Which of the following graphs could represent the graph of $y = |x - 1| + 2$?**

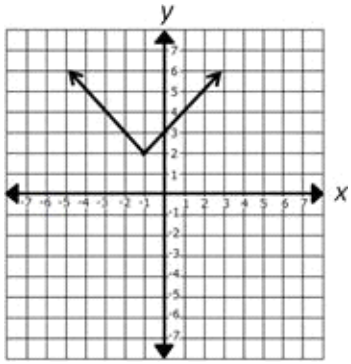
A



B



C



D