

March 21 Review HW

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Solve each equation.

1) $|6x| = 42$

2) $|6b| - 10 = 8$

3) $3|-3n - 6| - 4 = 23$

Solve each equation by completing the square.

4) $x^2 - 16x + 51 = -4$

5) $r^2 + 7r - 64 = -4$

Simplify.

6) $(-i)(-6i)(-8 + 4i)$

7) $\frac{3 - 2i}{5 + 5i}$

Factor each.

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

9) $x^2 + 3x - 4 = 0$

Factor each. One root has been given.

10) $x^3 - 19x - 30 = 0; -2$

Divide.

11) $(x^3 + 4x^2 - 19x + 14) \div (x - 2)$

12) $(16x^3 + 60x^2 + 72x + 41) \div (4x + 8)$

Simplify.

$$13) \frac{3\sqrt{5}}{\sqrt{9}}$$

$$14) \frac{3\sqrt{2} + 3}{-2 - 2\sqrt{3}}$$

Simplify each and state the excluded values.

$$15) \frac{1}{3p^3 + 21p^2} \div \frac{7p}{7p^2 + 7p}$$

$$16) \frac{4x}{x-8} \div \frac{8x^2 - 16x}{18x - 36}$$

$$17) \frac{10x + 70}{x + 7} \div \frac{x - 2}{2 - x}$$

$$18) \frac{18v + 72}{v + 8} \div \frac{20v + 80}{10}$$

Evaluate each function.

$$19) k(x) = 3x - 4; \text{ Find } k(6)$$

$$20) g(x) = x^3 - 2; \text{ Find } g(-2x)$$

Condense each expression to a single logarithm.

$$21) 5\log_9 x + 20\log_9 y$$

Expand each logarithm.

$$22) \log_6 (a^2 \cdot b)^3$$

Find each product.

$$23) (6p - 5)(8p - 8)$$

$$24) (7x - 3)(x^2 + 7x - 7)$$

Solve each system.

$$\begin{aligned} 25) \quad & 3a + 6c = -3 \\ & b = -2a - c + 4 \\ & -5a - 5b + 4c = -25 \end{aligned}$$

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Solve each equation.

1) $|6x| = 42$
 $\{7, -7\}$

2) $|6b| - 10 = 8$
 $\{3, -3\}$

3) $3|-3n - 6| - 4 = 23$
 $\{-5, 1\}$

Solve each equation by completing the square.

4) $x^2 - 16x + 51 = -4$
 $\{11, 5\}$

5) $r^2 + 7r - 64 = -4$
 $\{5, -12\}$

Simplify.

6) $(-i)(-6i)(-8 + 4i)$
 $48 - 24i$

7) $\frac{3 - 2i}{5 + 5i} \cdot \frac{1 - 5i}{10}$

Factor each.

8) $x^2 - 5x + 4 = 0$
 $(x - 1)(x - 4) = 0$

9) $x^2 + 3x - 4 = 0$
 $(x + 4)(x - 1) = 0$

Factor each. One root has been given.

10) $x^3 - 19x - 30 = 0; -2$
 $(x + 3)(x - 5)(x + 2) = 0$

Divide.

11) $(x^3 + 4x^2 - 19x + 14) \div (x - 2)$
 $x^2 + 6x - 7$

12) $(16x^3 + 60x^2 + 72x + 41) \div (4x + 8)$
 $4x^2 + 7x + 4 + \frac{9}{4x + 8}$

Simplify.

$$13) \frac{3\sqrt{5}}{\sqrt{9}}$$
$$\sqrt{5}$$

$$14) \frac{3\sqrt{2} + 3}{-2 - 2\sqrt{3}} \cdot \frac{3\sqrt{2} - 3\sqrt{6} + 3 - 3\sqrt{3}}{4}$$

Simplify each and state the excluded values.

$$15) \frac{1}{3p^3 + 21p^2} \div \frac{7p}{7p^2 + 7p}$$
$$\frac{p+1}{3p^2(p+7)}; \{0, -7, -1\}$$

$$16) \frac{4x}{x-8} \div \frac{8x^2 - 16x}{18x - 36} \cdot \frac{9}{x-8}; \{8, 2, 0\}$$

$$17) \frac{10x + 70}{x + 7} \div \frac{x - 2}{2 - x}$$
$$-10; \{-7, 2\}$$

$$18) \frac{18v + 72}{v + 8} \div \frac{20v + 80}{10} \cdot \frac{9}{v + 8}; \{-8, -4\}$$

Evaluate each function.

$$19) k(x) = 3x - 4; \text{ Find } k(6)$$
$$14$$

$$20) g(x) = x^3 - 2; \text{ Find } g(-2x)$$
$$-8x^3 - 2$$

Condense each expression to a single logarithm.

$$21) 5\log_9 x + 20\log_9 y$$
$$\log_9 (y^{20} x^5)$$

Expand each logarithm.

$$22) \log_6 (a^2 \cdot b)^3$$
$$6\log_6 a + 3\log_6 b$$

Find each product.

$$23) (6p - 5)(8p - 8)$$
$$48p^2 - 88p + 40$$

$$24) (7x - 3)(x^2 + 7x - 7)$$
$$7x^3 + 46x^2 - 70x + 21$$

Solve each system.

$$25) \begin{cases} 3a + 6c = -3 \\ b = -2a - c + 4 \\ -5a - 5b + 4c = -25 \end{cases}$$
$$(-1, 6, 0)$$