

Midterm Review 3

Date _____ Period _____

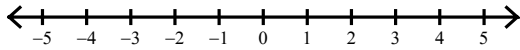
Solve each equation.

1) $2(7k - 4) = -6k + 6(3k - 6)$

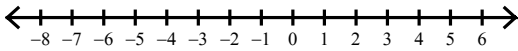
2) $-9|10 + 8v| = -54$

Solve each inequality and graph its solution.

3) $4 - 2\left|\frac{n}{3}\right| > 2$

**Solve each compound inequality and graph its solution.**

4) $-7p \leq -14$ or $2p < -6$



5) Jenny and Bill are selling pies for a school fundraiser. Customers can buy apple pies for \$6 and pumpkin pies for \$11. If 29 pies were sold for a total of \$229, how many of each pie were sold?

6) The school that Ashley goes to is selling tickets to a choral performance. During lunch they sold 25 tickets for a total of \$149. I adult tickets see for \$8 and students for \$5, how many of each ticket were sold?

Simplify each expression.

7) $(x + 5x^2 + 2x^4) + (5x^4 + 8x^2 - 8x^3)$

8) $(k^3 - 4k + 6k^4) - (k^3 + 7k^4 - 7k)$

Find each product.

9) $(7x - 5y)(7x^2 - 3xy - 3y^2)$

10) $2x(-4x^2 - 7xy - 6y^2)$

Divide.

11)
$$\frac{n^4 + n^3 - 28n^2 + 6n - 36}{n + 6}$$

12)
$$(5a^3 + 26a^2 + 21a - 28) \div (5a - 4)$$

Simplify.

13)
$$(-3 + i) - (7 - 6i)$$

14)
$$(-3 - 4i) - (-7 + 5i)$$

15)
$$(3 + 6i)(-5 + 2i)$$

16)
$$(-4 - 5i)(1 + 8i)$$

17)
$$\frac{2 - 7i}{2 + 4i}$$

18)
$$\frac{6 + 9i}{5 - 9i}$$


19)
$$\frac{10}{2 + 2i}$$

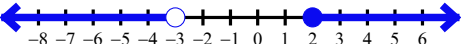
20)
$$\frac{3 - 10i}{2 - 8i}$$

Answers to Midterm Review 3 (ID: 1)

1) $\{-14\}$

2) $\left\{-\frac{1}{2}, -2\right\}$

3) $-3 < n < 3$: 

4) $p \geq 2$ or $p < -3$: 

5) apple pie: 18, pumpkin pie: 11 6) adult tickets: 8, student tickets: 17

7) $7x^4 - 8x^3 + 13x^2 + x$

8) $-k^4 + 3k$

9) $49x^3 - 56x^2y - 6xy^2 + 15y^3$

10) $-8x^3 - 14x^2y - 12xy^2$

11) $n^3 - 5n^2 + 2n - 6$

12) $a^2 + 6a + 9 + \frac{8}{5a - 4}$

13) $-10 + 7i$

14) $4 - 9i$

15) $-27 - 24i$

16) $36 - 37i$

17) $\frac{-12 - 11i}{10}$

18) $\frac{-51 + 99i}{106}$

19) $\frac{5 - 5i}{2}$

20) $\frac{43 + 2i}{34}$