

signature

MATH 10 - CHAPTER 4 - PRETEST
Multiple Choice - PART A - non-calculator - 10 minutes
CIRCLE the choice that best completes the statement or answers the question.

1. Factor the binomial $44a + 99a^2$.

a. $a(44 + 99a)$

b. $11(4a + 9a^2)$

c. $11a(4 + 9a)$

d. $22a(2 + 9a)$

 $11a($

2. Factor the trinomial $-24c^3d - 40c^2d^2 - 32cd^3$.

a. $-8cd(3c^2 - 5cd - 4d^2)$

b. $8cd(3c^2 + 5cd + 4d^2)$

c. $8cd(-3c^2 + 5cd + 4d^2)$

d. $-8cd(3c^2 + 5cd + 4d^2)$

$-8cd(3c^2 + 5cd + 4d^2)$

3. Simplify the expression $y^2 + 8y - 6 - 9y^2 - 24y - 26$, then factor.

a. $-8(y^2 - 2y - 4)$

b. $-8(y^2 + 2y + 4)$

c. $-4(2y^2 + 4y + 8)$

d. $-4(2y^2 + 4y + 1)$

$-8y^2 - 16y - 32$
 $-8(y^2 + 2y + 4)$

4. Factor: $t^2 + 9t - 36$

a. $(t - 2)(t + 18)$

b. $(t + 2)(t - 18)$

c. $(t + 12)(t - 3)$

d. $(t - 12)(t + 3)$

 $12, -3$

5. Factor: $-3b^2 + 15b + 18$

a. $-3(b - 2)(b + 3)$

b. $-3(b + 2)(b - 3)$

c. $-3(b - 1)(b + 6)$

d. $-3(b + 1)(b - 6)$

$-3(b^2 - 5b - 6)$
 $-6, 1$

6. Complete: $(a + 6)(a - \square) = a^2 + \square a - 12$

a. $(a + 6)(a - 4) = a^2 + 4a - 12$

b. $(a + 6)(a - 2) = a^2 + 4a - 12$

c. $(a + 6)(a - 2) = a^2 + 2a - 12$

d. $(a + 6)(a - 4) = a^2 + 2a - 12$

PART B - calculator may be used after 10 minutes

7. Factor: $-5m^2 + 20m + 60$

- a. $-5(m+2)(m-6)$
- b. $-5(m-2)(m+6)$
- c. $-5(m-4)(m+3)$
- d. $-5(m+4)(m-3)$

$$-5(m^2 - 4m - 12)$$

$$-6, 2$$

8. Factor: $16p^2 - 81q^2$

- a. $(4p - 9q)^2$
- b. $(4p + 9q)^2$
- c. $(16p - 9q)(p - 9q)$
- d. $(4p + 9q)(4p - 9q)$

9. Factor: $3z^4 - 768z^2$

- a. $3z^2(z+16)(z-16)$
- b. $3z^2(z+16)^2$
- c. $z^2(z+48)(z-16)$
- d. $3z^2(z-16)^2$

$$3z^2(z^2 - 256)$$

10. Identify the greatest common factor of the terms in the trinomial $6s^3t^4 + 12s^4t^2 - 15s^2t^3$.

- a. ~~$6s^2t^2$~~
- b. $3s^2t^2$
- c. $3s^2t^3$
- d. ~~$3s^3t^2$~~

$$3s^2t^2$$

Short Answer - SHOW YOUR WORK

11. Simplify $\underline{25a^3b^2} - \underline{10a^2b^3} + 19b^4 - \underline{10a^3b^2} + \underline{30a^2b^3} - 29b^4$, then factor.

WORK

$$15a^3b^2 + 20a^2b^3 - 10b^4$$

$$5b^2(3a^3 + 4a^2b - 2b^2)$$

ANSWER

12. Factor: $s^2 - 33s + 32$

WORK

$$\oplus -33$$

$$\otimes 32 - 32, 1$$

ANSWER

$$(s-32)(s-1)$$

Problem - SHOW YOUR WORK

13. A square is drawn inside a circle with radius $11x$.

a) Write an expression for the area of the shaded region. (hint-remember that really special theorem!)

$\{A(\text{circle}) = \pi r^2 \quad A(\text{square}) = \text{side}^2\}$

square $(11x)^2 + (11x)^2 = 121x^2 + 121x^2 = \sqrt{242x^2} = \text{side}$

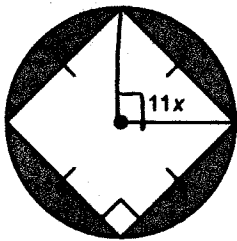
$A_{\circ} = \pi(11x)^2$
 $= 121\pi x^2$

$A_{\square} = (\sqrt{242x^2})^2$
 $= 242x^2$

$\circ - \square$
 $121\pi x^2 - 242x^2$

b) Factor the expression.

$121x^2(\pi - 2)$



14. Factor.

$n^2 + n - 42$

$\oplus 1 \quad -6, 7$
 $\otimes -42$

$(x-6)(x+7)$