

Name _____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Factor out the greatest common factor.

1) $48m^9 - 30m^7 - 30m^5$

1) _____

Factor by grouping.

2) $8a^3 - 6a^2b - 20ab^2 + 15b^3$

2) _____

Factor completely. If the polynomial cannot be factored, write prime.

3) $x^2 - x - 63$

3) _____

Factor completely.

4) $5x^2 - 35x + 60$

4) _____

5) $x^2 + 8xy + 12y^2$

5) _____

Factor by grouping.

6) $9x^2 - 9xt - 4t^2$

6) _____

7) $8z^2 - 6z - 9$

7) _____

8) $8x^2 - 18xt + 9t^2$

8) _____

Factor the binomial completely. If it is prime, say so.

9) $64x^2 - 81$

9) _____

10) $9y^4 - 64$

10) _____

Solve the equation.

11) $\left(5x - \frac{1}{2}\right)\left(x + \frac{1}{5}\right)$

11) _____

12) $n^2 - 36 = 0$

12) _____

Solve the problem.

- 13) A rectangle has a length of $x + 3$ and a width of $x - 3$, and has an area of 40 square units.
Find the length and width of the rectangle. ($A = LW$)

13) _____

Rewrite the rational expression with the indicated denominator.

14) $\frac{a}{a + 3b} = \frac{?}{a^2 - 9b^2}$

14) _____

Write the rational expression in lowest terms.

15) $\frac{a^2 - 7a}{(a + 3)(a - 7)}$

15) _____

$$16) \frac{m^2 - 4m}{4 - m}$$

16) _____

Multiply. Write the answer in lowest terms.

$$17) \frac{8p - 8}{p} \cdot \frac{2p^2}{9p - 9}$$

17) _____

Multiply or divide as indicated. Write the answer in lowest terms.

$$18) \frac{k^2 + 13k + 42}{k^2 + 15k + 56} \cdot \frac{k^2 + 8k}{k^2 + 11k + 30}$$

18) _____

$$19) \frac{y^3 - 4y}{y^2 - 16} \div \frac{y^2 - 6y - 27}{y^2 + 7y + 12}$$

19) _____

Factor the polynomial completely.

$$20) 125s^3 + 1$$

20) _____

Solve the problem.

21) A contractor mixes concrete from bags of pre-mix for small jobs. How many bags with 7% cement should he mix with 4 bags of 17% cement to produce a mix containing 11% cement?

21) _____

Answer Key

Testname: 2018 MAT1033 TEST 2 VERSION B

- 1) $6m^5(8m^4 - 5m^2 - 5)$
- 2) $(2a^2 - 5b^2)(4a - 3b)$
- 3) Prime
- 4) $5(x - 3)(x - 4)$
- 5) $(x + 2y)(x + 6y)$
- 6) $(3x + t)(3x - 4t)$
- 7) $(2z - 3)(4z + 3)$
- 8) $(4x - 3t)(2x - 3t)$
- 9) $(8x + 9)(8x - 9)$
- 10) $(3y^2 + 8)(3y^2 - 8)$
- 11) $\left\{\frac{1}{10}, -\frac{1}{5}\right\}$
- 12) $\{-6, 6\}$
- 13) width = 4 units; length = 10 units
- 14) $\frac{a^2 - 3ab}{a^2 - 9b^2}$
- 15) $\frac{a}{a + 3}$
- 16) $-m$
- 17) $\frac{16p}{9}$
- 18) $\frac{k}{k + 5}$
- 19) $\frac{y(y^2 - 4)}{(y - 4)(y - 9)}$
- 20) $(5s + 1)(25s^2 - 5s + 1)$
- 21) 6 bags