

**DSPM 0800 FINAL EXAM REVIEW**

**Factor out the greatest common factor.**

1)  $24m^9 - 60m^6 - 72m^3$

2)  $32m^8 + 12m^5 + 20m^3$

**Factor by grouping.**

3)  $15a^3 + 10a^2b + 18ab^2 + 12b^3$

4)  $r^3 + r^2 + 5r + 5$

**Factor completely.**

5)  $x^2 - x - 72$

6)  $x^2 - 6x - 55$

7)  $x^2 + 2xy - 15y^2$

8)  $x^2 + 13x + 14$

9)  $12y^2 + 17y + 6$

10)  $15x^2 + 22x + 8$

11)  $18x^2 - 78x - 60$

12)  $10x^2 - 35x - 20$

13)  $49x^2 - 64$

14)  $4y^4 - 81$

**Solve the equation.**

15)  $x^2 - x = 90$

16)  $5x^2 - 30x + 40 = 0$

17)  $15m^2 - 9m = 0$

18)  $9y^2 + 12y + 4 = 0$

19)  $4k^2 - 64 = 0$

20)  $21n^2 + 63n = 0$

**Simplify the expression. Use positive exponents. Assume variables represent nonzero real numbers.**

21)  $x^8 \cdot x^2 \cdot x^8$

22)  $2^5 \cdot 2^3 \cdot 2^2$

23)  $\left(\frac{3p^4v^3}{s^2}\right)^3$

24)  $(-2^2)^6$

**Evaluate.**

25)  $(-7)^0 - 7^0$

26)  $11^0 + 7^0$

27)  $\left(\frac{5}{6}\right)^{-2}$

28)  $(-3)^{-4}$

**Write the number in scientific notation.**

29) 7,583,040

30) 179.6

**Perform the indicated operation.**

31)  $(7n^6 - 9n - 7n^4) + (3n^4 + 7n^6 - 7n)$

32)  $(5n^6 + 2n + 5n^4) + (-2n^4 + 8n^6 + 7n)$

33)  $(6n^6 + 15n^3 + 10) - (-6n^3 + 8n^6 + 4) + (n^7 + 7)$

**Find the product.**

34)  $(2x + 11)(x + 5)$

35)  $(-11 + x)(3x - 6)$

36)  $(5m + 2)^2$

37)  $(10x + 9y)^2$

38)  $(12p + 5)(12p - 5)$

39)  $(2m - 5w)(2m + 5w)$

**Find the intercepts for the graph of the equation and graph.**

40)  $3x + y = 6$

41)  $2x + y = -8$

**Graph the linear equation.**

42)  $x = -7$

43)  $3x = y - 4$

**Solve the equation.**

44)  $-9b + 1 + 7b = -3b + 6$

45)  $-3a + 5 + 4a = 13 - 26$

46)  $\frac{2}{5}x - \frac{1}{3}x = 5$

47)  $\frac{2}{5}x - \frac{1}{3}x = 6$

**Solve the formula for the specified variable.**

48)  $V = \frac{1}{3}Bh$  for B

49)  $A = \frac{1}{2}bh$  for b

**Solve the problem.**

50) Mardi received an inheritance of \$60,000. She invested part at 12% and deposited the remainder in tax-free bonds at 8%. Her total annual income from the investments was \$6800. Find the amount invested at 12%.

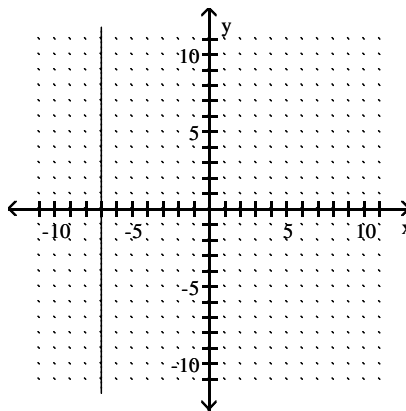
51) Walt made an extra \$10,000 last year from a part-time job. He invested part of the money at 6% and the rest at 9%. He made a total of \$690 in interest. How much was invested at 9%?

Answer Key

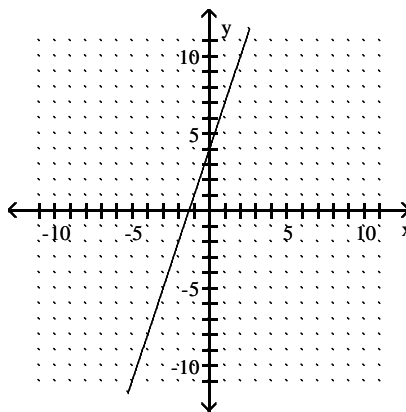
Testname: DSPM0800 FINAL EXAM REVIEW08S

- 1)  $12m^3 (2m^6 - 5m^3 - 6)$
- 2)  $4m^3 (8m^5 + 3m^2 + 5)$
- 3)  $(5a^2 + 6b^2)(3a + 2b)$
- 4)  $(r^2 + 5)(r + 1)$
- 5)  $(x + 8)(x - 9)$
- 6)  $(x + 5)(x - 11)$
- 7)  $(x + 5y)(x - 3y)$
- 8) Prime
- 9)  $(4y + 3)(3y + 2)$
- 10)  $(3x + 2)(5x + 4)$
- 11)  $6(3x + 2)(x - 5)$
- 12)  $5(2x + 1)(x - 4)$
- 13)  $(7x + 8)(7x - 8)$
- 14)  $(2y^2 + 9)(2y^2 - 9)$
- 15) -9, 10
- 16) 2, 4
- 17)  $\frac{3}{5}, 0$
- 18)  $-\frac{2}{3}, -\frac{2}{3}$
- 19) 4, -4
- 20) -3, 0
- 21)  $x^{18}$
- 22)  $2^{10}$
- 23)  $\frac{27p^{12}v^9}{s^6}$
- 24)  $2^{12}$
- 25) 0
- 26) 2
- 27)  $\frac{36}{25}$
- 28)  $\frac{1}{81}$
- 29)  $7.58304 \times 10^6$
- 30)  $1.796 \times 10^2$
- 31)  $14n^6 - 4n^4 - 16n$
- 32)  $13n^6 + 3n^4 + 9n$
- 33)  $n^7 - 2n^6 + 21n^3 + 13$
- 34)  $2x^2 + 21x + 55$

- 35)  $3x^2 - 39x + 66$
- 36)  $25m^2 + 20m + 4$
- 37)  $100x^2 + 180xy + 81y^2$
- 38)  $144p^2 - 25$
- 39)  $4m^2 - 25w^2$
- 40) (2, 0) (0, 6)
- 41) (-4, 0) (0, -8)
- 42)



43)



- 44) { 5 }
- 45) { -18 }
- 46) { 75 }
- 47) { 90 }
- 48)  $B = \frac{3V}{h}$
- 49)  $b = \frac{2A}{h}$
- 50) \$50,000
- 51) \$3000