

Review Topics Worksheet #3

Date _____ Period _____

Factor each completely.

1) $n^2 - 15n + 50$

2) $v^3 - 3v^2 - 10v$

3) $a^3 + a^2$

4) $6x^4 - 36x^3$

5) $3b^3 + 14b^2 - 49b$

6) $3n^3 - 31n^2 + 56n$

7) $5n^3 + 7n^2$

8) $7k^2 - 62k + 48$

9) $18u^3 + 42u^2v + 12v^2u$

10) $7u^2 + 72uv + 20v^2$

11) $3x^2 - 23xy + 40y^2$

12) $5x^2 + 49xy - 10y^2$

13) $4n^2 - 4n + 1$

14) $m^2 - 8m + 16$

15) $r^2 + 10r + 25$

16) $9n^2 - 6n + 1$

17) $64 + x^3$

18) $125 + a^3$

19) $a^3 + 27$

20) $m^3 + 216$

21) $216 - a^3$

22) $x^3 - 8$

23) $x^3 - 27$

24) $1 - x^3$

25) $m^3 + 64n^3$

26) $3x^3 + 192y^3$

27) $32u^3 + 500v^3$

28) $m^3 + 216n^3$

29) $54a^3 - 128b^3$

30) $500x^3 - 32y^3$

31) $8x^3 - 125y^3$

32) $81x^3 - 3y^3$

Evaluate each function.

33) $h(x) = -2|3x - 3| - 3$; Find $h(2)$

34) $g(t) = 4t + 5$; Find $g(8)$

35) $h(x) = |x| + 2$; Find $h(-8)$

36) $f(n) = -3n^3 - 3$; Find $f(2)$

Identify the center and radius of each. Then sketch the graph.

37) $x^2 + y^2 + 6x + 2y + 6 = 0$

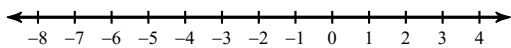
38) $4x^2 + 4y^2 - 12x + 32y + 57 = 0$

39) $x^2 + y^2 + 2x - 8y + 8 = 0$

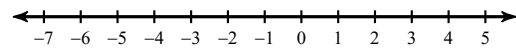
40) $x^2 + y^2 - 4x - 2y - 4 = 0$

Solve each inequality and graph its solution.

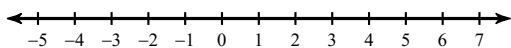
41) $-4|7n + 1| + 2 > -86$



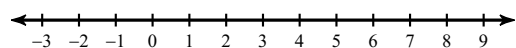
42) $5 + 3|9r + 7| \geq 38$



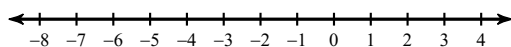
43) $5|9 - 10b| - 8 \leq 37$



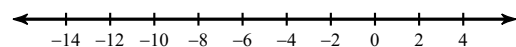
44) $2 + 6|-10 - 7n| < 62$



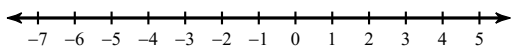
45) $8 + 8|-2n - 1| > 16$



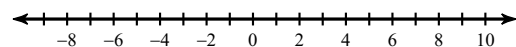
46) $-8|2x + 10| - 5 < -117$



47) $-6|2r + 2| + 4 \geq -8$

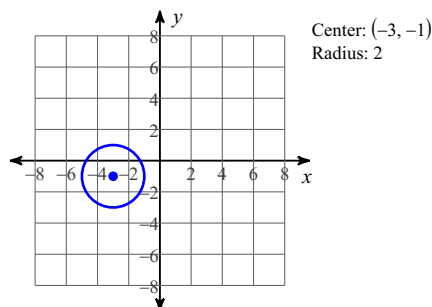


48) $-|5 - 6n| + 5 \leq -24$

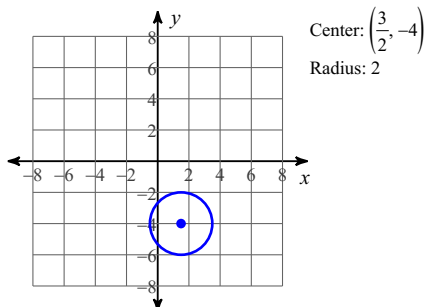


Answers to Review Topics Worksheet #3

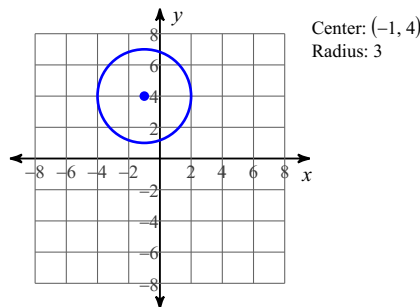
- | | | | |
|---------------------------------|---------------------------------|-----------------------------|---------------------|
| 1) $(n-5)(n-10)$ | 2) $v(v+2)(v-5)$ | 3) $a^2(a+1)$ | 4) $6x^3(x-6)$ |
| 5) $b(3b-7)(b+7)$ | 6) $n(3n-7)(n-8)$ | 7) $n^2(5n+7)$ | 8) $(7k-6)(k-8)$ |
| 9) $6u(3u+v)(u+2v)$ | 10) $(7u+2v)(u+10v)$ | 11) $(3x-8y)(x-5y)$ | 12) $(5x-y)(x+10y)$ |
| 13) $(2n-1)^2$ | 14) $(m-4)^2$ | 15) $(r+5)^2$ | 16) $(3n-1)^2$ |
| 17) $(4+x)(16-4x+x^2)$ | 18) $(5+a)(25-5a+a^2)$ | 19) $(a+3)(a^2-3a+9)$ | |
| 20) $(m+6)(m^2-6m+36)$ | 21) $(6-a)(36+6a+a^2)$ | 22) $(x-2)(x^2+2x+4)$ | |
| 23) $(x-3)(x^2+3x+9)$ | 24) $(1-x)(1+x+x^2)$ | 25) $(m+4n)(m^2-4mn+16n^2)$ | |
| 26) $3(x+4y)(x^2-4xy+16y^2)$ | 27) $4(2u+5v)(4u^2-10uv+25v^2)$ | | |
| 28) $(m+6n)(m^2-6mn+36n^2)$ | 29) $2(3a-4b)(9a^2+12ab+16b^2)$ | | |
| 30) $4(5x-2y)(25x^2+10xy+4y^2)$ | 31) $(2x-5y)(4x^2+10xy+25y^2)$ | | |
| 32) $3(3x-y)(9x^2+3xy+y^2)$ | 33) -9 | 34) 37 | |
| 35) 10 | 36) -27 | 37) | |



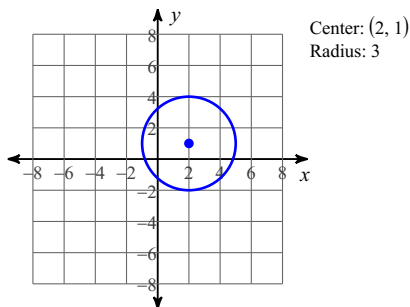
38)



39)



40)



41) $-\frac{23}{7} < n < 3$:

42) $r \geq \frac{4}{9}$ or $r \leq -2$:

43) $0 \leq b \leq \frac{9}{5}$:

44) $-\frac{20}{7} < n < 0$:

45) $n < -1$ or $n > 0$:

