

Review Topics Worksheet #2

Date _____ Period _____

Factor each completely.

1) $r^2 + 16r + 60$

2) $6n^3 + 54n^2$

3) $b^2 - 15b + 56$

4) $x^3 + 6x^2 - 40x$

5) $30v^2 + 156v + 30$

6) $10r^2 - 26r - 56$

7) $7x^2 - 41x - 56$

8) $21x^2 - 195x - 150$

9) $5x^3 + 34x^2y + 45y^2x$

10) $35x^3 + 225x^2y + 250y^2x$

11) $5u^2 - 3uv - 14v^2$

12) $4m^2 + 6mn - 10n^2$

13) $9x^2 - 25$

14) $4n^2 - 1$

15) $25x^2 - 20x + 4$

16) $4r^2 - 4r + 1$

17) $x^3 + 1$

18) $125 + m^3$

19) $x^3 + 216$

20) $a^3 + 27$

21) $x^3 - 27$

22) $m^3 - 216$

23) $1 - x^3$

24) $x^3 - 64$

25) $27x^3 + 8$

26) $m^3 + 1$

27) $64x^3 + 1$

28) $125u^3 + 8$

29) $8 - 27x^3$

30) $64m^3 - 1$

31) $64x^3 - 27$

32) $125x^3 - 27$

Evaluate each function.

33) $w(n) = |3n - 1|$; Find $w(2)$

34) $f(x) = -x + 2$; Find $f(0)$

35) $f(x) = 4x - 1$; Find $f(-2)$

36) $h(x) = |x + 3| + 2$; Find $h(-10)$

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

37) $x^2 + y^2 + 8x - 4y + 19 = 0$

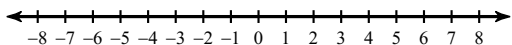
38) $x^2 + y^2 - 2x + 8y + 13 = 0$

39) $x^2 + y^2 - 6x + 8y + 16 = 0$

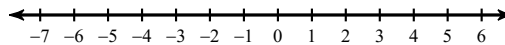
40) $x^2 + y^2 + 8x - 2y + 13 = 0$

Solve each inequality and graph its solution.

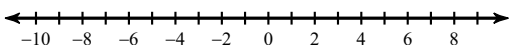
41) $|m| > 5$



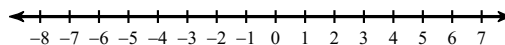
42) $|x| \leq 5$



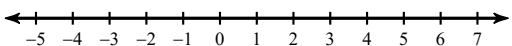
43) $|v| < 8$



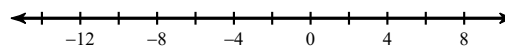
44) $|k| \leq 6$



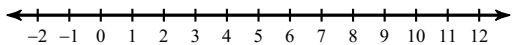
45) $6 - |3 - 10n| > -21$



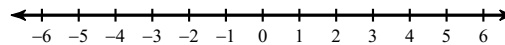
46) $6 + |8r + 9| > 69$



47) $6|-x + 5| + 6 \geq 30$

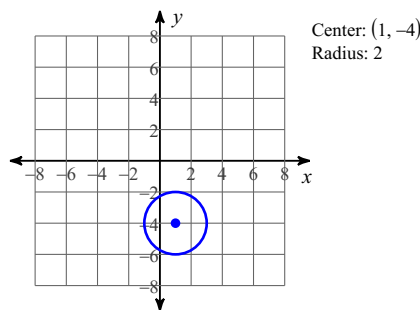
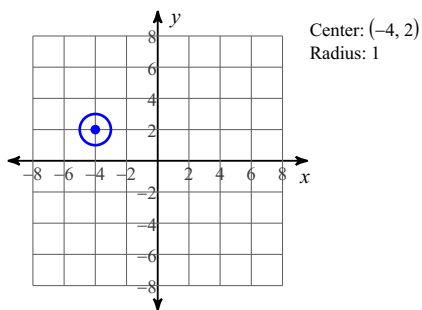


48) $9|10n + 8| + 4 \geq 112$

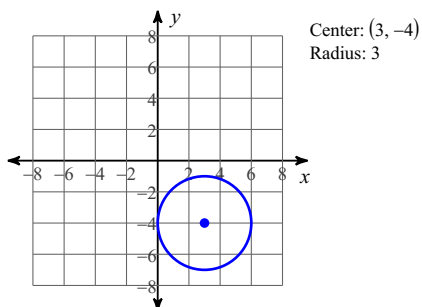


Answers to Review Topics Worksheet #2

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|---------------------------|---------------------------|--------------------------|--------------------|
| 1) $(r+6)(r+10)$ | 2) $6n^2(n+9)$ | 3) $(b-8)(b-7)$ | 4) $x(x-4)(x+10)$ |
| 5) $6(5v+1)(v+5)$ | 6) $2(5r+7)(r-4)$ | 7) $(7x+8)(x-7)$ | 8) $3(7x+5)(x-10)$ |
| 9) $x(5x+9y)(x+5y)$ | 10) $5x(7x+10y)(x+5y)$ | 11) $(5u+7v)(u-2v)$ | |
| 12) $2(2m+5n)(m-n)$ | 13) $(3x+5)(3x-5)$ | 14) $(2n+1)(2n-1)$ | 15) $(5x-2)^2$ |
| 16) $(2r-1)^2$ | 17) $(x+1)(x^2-x+1)$ | 18) $(5+m)(25-5m+m^2)$ | |
| 19) $(x+6)(x^2-6x+36)$ | 20) $(a+3)(a^2-3a+9)$ | 21) $(x-3)(x^2+3x+9)$ | |
| 22) $(m-6)(m^2+6m+36)$ | 23) $(1-x)(1+x+x^2)$ | 24) $(x-4)(x^2+4x+16)$ | |
| 25) $(3x+2)(9x^2-6x+4)$ | 26) $(m+1)(m^2-m+1)$ | 27) $(4x+1)(16x^2-4x+1)$ | |
| 28) $(5u+2)(25u^2-10u+4)$ | 29) $(2-3x)(4+6x+9x^2)$ | 30) $(4m-1)(16m^2+4m+1)$ | |
| 31) $(4x-3)(16x^2+12x+9)$ | 32) $(5x-3)(25x^2+15x+9)$ | 33) 5 | |
| 34) 2 | 35) -9 | 36) 9 | |
| 37) | | 38) | |



39)



40)

