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## Section 2.1 Extra Practice

1. Sketch an angle in standard position with each given measure.
a) $24^{\circ}$
b) $104^{\circ}$
c) $204^{\circ}$
d) $304^{\circ}$
2. State the reference angle for each angle in standard position.
a) $55^{\circ}$
b) $155^{\circ}$
c) $255^{\circ}$
d) $355^{\circ}$
3. Determine the measure of the three other angles in standard position, $0^{\circ}<\theta<360^{\circ}$, that have a reference angle of
a) $40^{\circ}$
b) $72^{\circ}$
c) $88^{\circ}$
d) $3^{\circ}$
4. Complete the table. Determine the measure of each angle in standard position given its reference angle and the quadrant in which the terminal arm lies.

|  | Reference <br> Angle | Quadrant | Angle in <br> Standard <br> Position |
| :--- | :---: | :---: | :---: |
| a) | $30^{\circ}$ | II |  |
| b) | $45^{\circ}$ | III |  |
| c) | $60^{\circ}$ | IV |  |

5. Determine if the pair of angles have the same reference angle.
a) $50^{\circ}, 140^{\circ}$
b) $200^{\circ}, 290^{\circ}$
c) $216^{\circ}, 324^{\circ}$
d) $91^{\circ}, 181^{\circ}$
6. Determine the exact value of each indicated side.
a) side $a$, side $b$

b) DE


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A B=B C=4 m
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7. A clock has a minute hand that is 12 cm long. Determine the vertical distance of the tip of the minute hand between the times 8:05 a.m. and 8:25 a.m.
